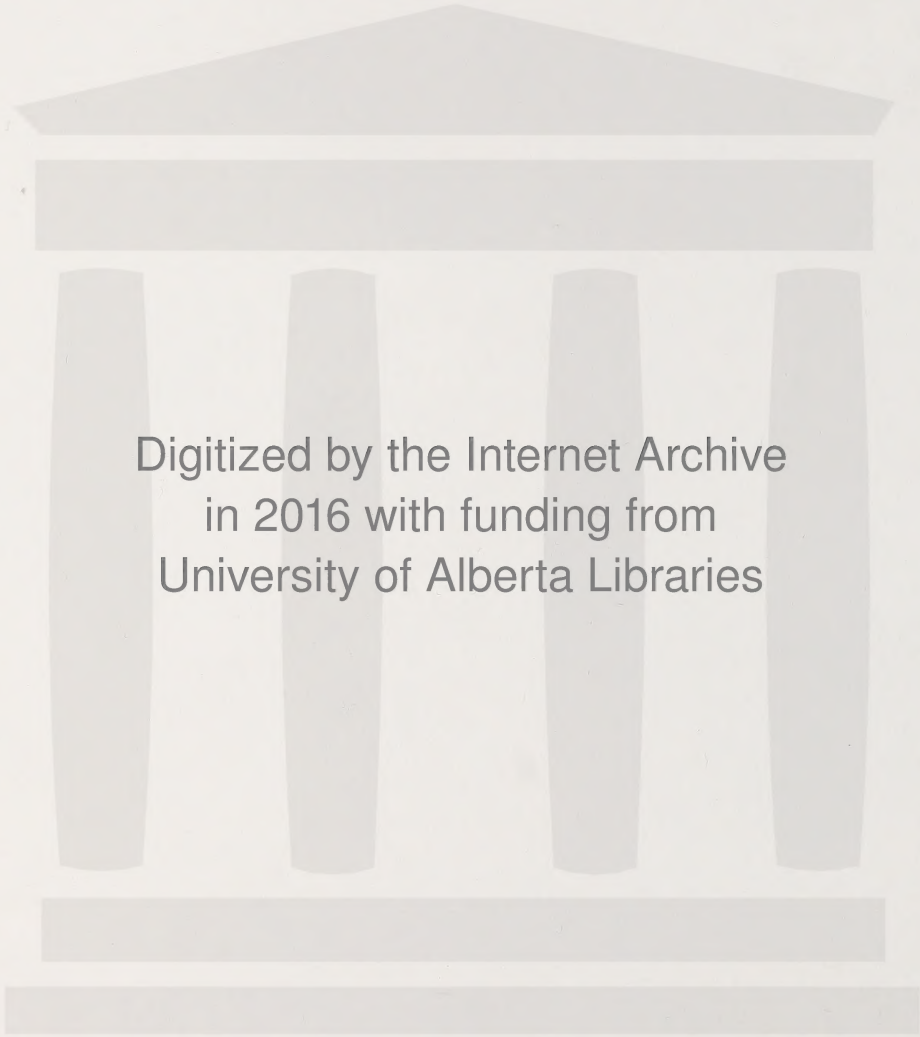
Grade One

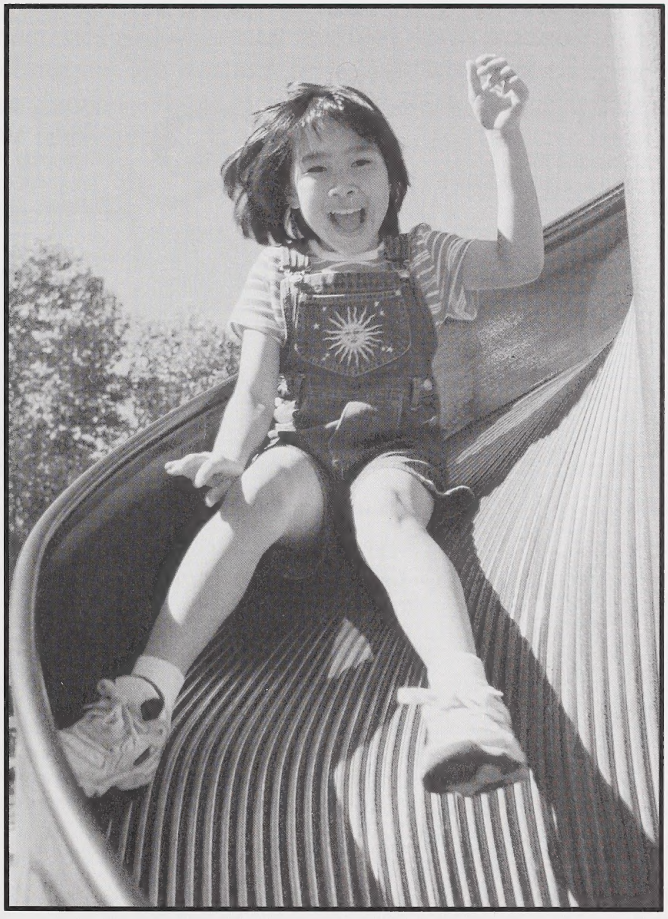
Mathematics

Module 3

Distance Learning



Mathematics Module 3



Distance Learning

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This document is intended for	
Students	✓
Teachers	✓
Administrators	
Home Instructors	✓
General Public	
Other	

The Learning Technologies Branch has an Internet site that you may find useful. The address is as follows:

http://www.learning.gov.ab.ca/ltb

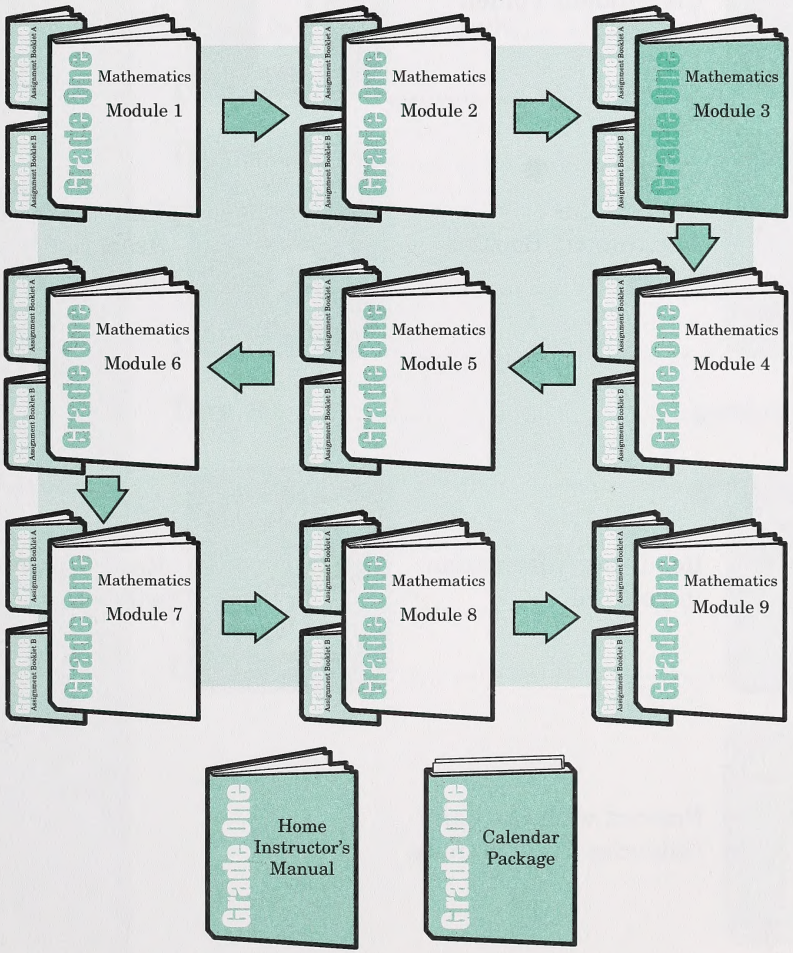
The use of the Internet is optional. Exploring the electronic information superhighway can be educational and entertaining. However, be aware that these computer networks are not censored. Students may unintentionally or purposely find articles on the Internet that may be offensive or inappropriate. As well, the sources of information are not always cited and the content may not be accurate. Therefore, students may wish to confirm facts with a second source.

Course Overview and Basic Components

Welcome to the Grade One Mathematics program.

The booklet you are presently reading is called a Student Module Booklet. It will take you through the course and show you, step by step, what to do with the student and how to do it. The activities you do will prepare the student for the assignments.

Grade One Mathematics contains nine modules. Each module has two Assignment Booklets. The module you are working on is highlighted in a darker colour. The two other basic course components—a Home Instructor's Manual and a Calendar Package—are also highlighted.

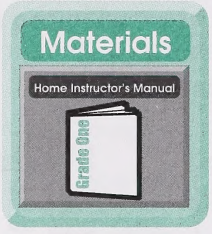


Visual Cues

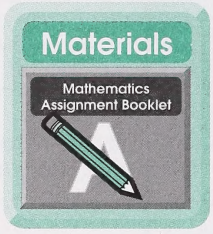
Throughout the Grade One Mathematics program, you will find visual cues that indicate a material needed or an activity to carry out. Read the following explanations to discover what each icon prompts you to do.

Icons: Materials

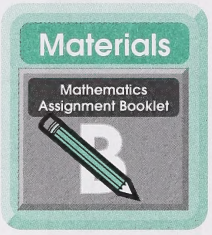
Place an item in the Student Folder.



Turn to the Home Instructor's Manual for further information.



Turn to the Assignment Booklet indicated.



Turn to the Assignment Booklet indicated.

Icons: Activities

Read this information to yourself.

Read this information with the student.

Proceed with the daily Calendar Time activity.

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Mathematics Module 3 Overview

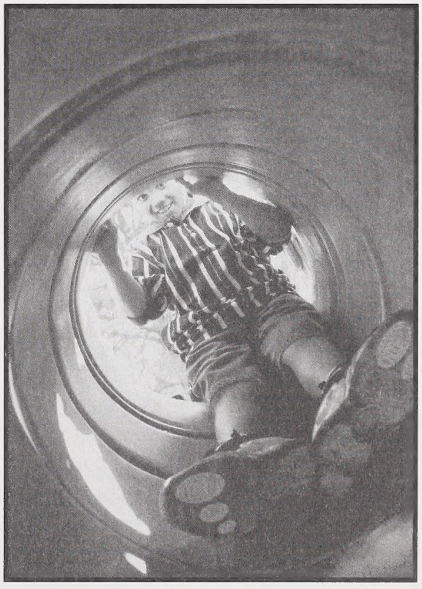
Welcome to the third module of the Grade One Mathematics program.

In this module, the child will be studying geometric solids and shapes, numbers to ten, and addition and subtraction number sentences to five.

The module begins with the study of geometric solids and shapes that exist in the child's environment. Experiences in describing, comparing, and building with these solids and shapes are part of the day's activities. Exploration of solids and shapes continues with sorting and patterning activities.

This module goes on to deal with important concepts of number understanding (number sense). Counting activities, comparing sets, and learning the sequence of numbers, as well as classifying, arranging in series, and patterning, form a vital part of this module. These activities all contribute to the child's knowledge of number relationships.

The child also develops an awareness of real-world settings for the operations of addition and subtraction, the models and properties of each operation, the relationship among the operations, and the meaning of the operations.



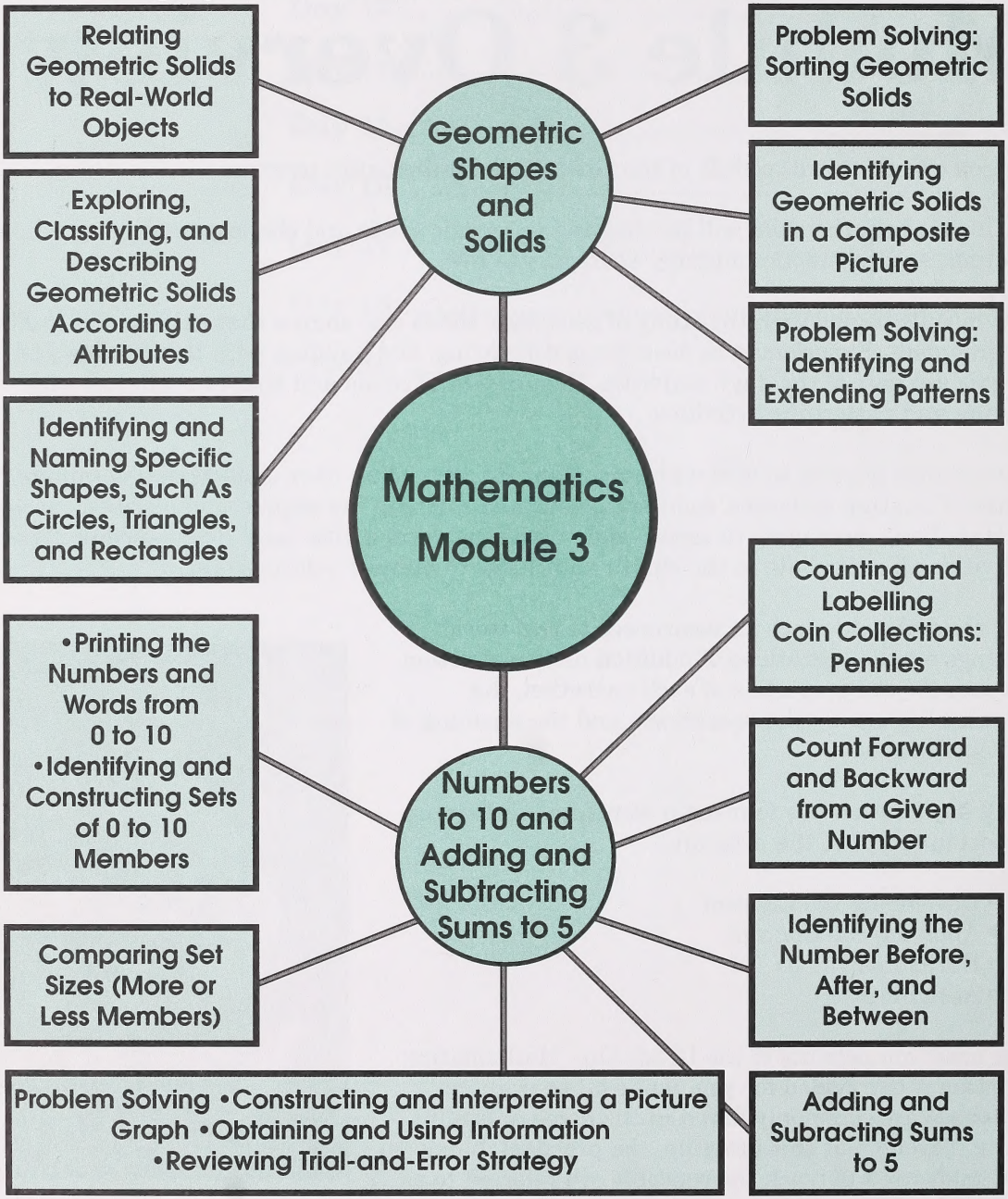
Each day's lesson has four main elements. All four are important parts of the program.

- Developing the Concept
- Applying the Concept
- Enrichment
- Assignments

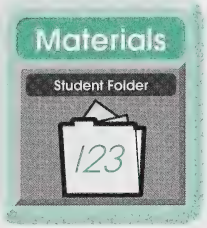
The basic components of the Grade One Mathematics program are provided for you, while other practical materials are commonly found in the home or easily made. Throughout this program, the practical, hands-on materials used to teach the concepts are referred to as *manipulatives*.

Module Web Chart

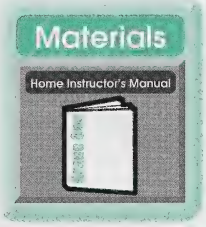
This chart highlights the main mathematical topics for this module.



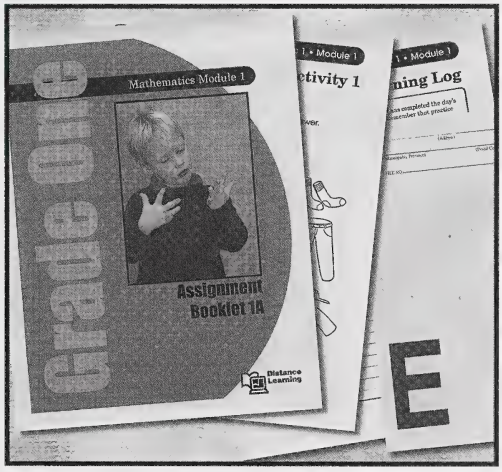
Mathematics Module Submissions



Place completed items in the Student Folder when you see this icon. On Day 9 and Day 18 of each module, you will find a checklist in the Assignment Booklet to help you compile items for submission to the child's teacher. The teacher will let you know when to provide these items for marking.



Note: The Student Folder is not included with the basic course components. Refer to the Home Instructor's Manual for information on the Student Folder.



Calendar Time

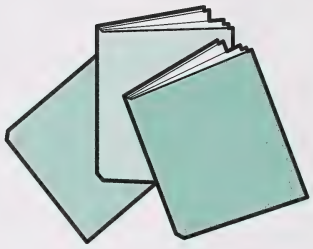
Many essential concepts are learned through the calendar activities that begin each lesson. If your student is not enrolled in the accompanying Grade One Thematic program, refer to the Calendar Package for information, activities, and resources.

Additional Resources

The basic mathematics resources that the student needs are provided. You may wish to extend these resources with additional ones from a public or school library. Listed below are concept-related books, songs, and rhymes that could enrich this module. A trip to the library in search of these books may be a delightful beginning to your module. In addition, keep in mind that there are many games and computer programs on the market that may enhance the student's learning opportunities.

Solids and Shapes Resources

Books



Allington, R. *Shapes*. 1985.
Barrett, P., and S. Barrett. *The Circle Sarah Drew. The Line Sophie Drew. The Square Ben Drew*. 1973.
Berenstain, S., and J. Berenstain. *Inside, Outside, Upside Down*. 1968.
Bruna, D. *I Know About Shapes*. 1984.
Carle, E. *The Very Busy Spider*. 1989.
Emberley, E. *The Wing on a Flea: A Book About Shapes*. 1988.
Fisher, L. E. *Look Around! A Book About Shapes*. 1987.
Hoban T. *Circles, Triangles, and Squares*. 1974.
Hutchins, P. *Changes, Changes*. 1987.
Jonas, A. *Round Trip*. 1984.
Keats, E. *Regards to the Man in the Moon*. 1981.
Munsch, R. *Moira's Birthday*. 1987.
Pienkowski, J. *Shapes*. 1975.
Reiss, J. *Shapes*. 1987.
Seuss, Dr. *The Shape of Me and Other Stuff*. 1973.
Thomson, R. *All About Shapes*. 1987.
Van der Meer, R., and A. Van der Meer. *Fun with Shapes: A Spinning Wheel Book*. 1990.
Waterman, J. *Harry's Shapes*. 1982.

Songs and Rhymes

"Humpty Dumpty"

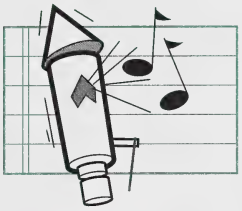
Numbers to Ten Resources

Books

Adams, Pam. *There Were Ten in the Bed*. 1979.
Anno, M. *Anno's Counting Book*. 1977.
Bogart, Jo. *Ten for Dinner*. 1989.
Burningham, Jona. *Mr. Gumpy's Outing*. 1970.
Carle, Eric. *The Very Hungry Caterpillar*. 1969.
Gretz, Suzanna. *Teddybears One to Ten*. 1969.
Hutchins, Pat. *One Hunter*. 1982.
Langstaff, John. *Over in the Meadow*. 1967.
Quackenbush, Robert M. (ill.) *Poems for Counting*. 1963.
Viorst, Judith. *The Tenth Good Thing About Barney*. 1971.

Songs and Rhymes

"Ten Little Kittens"
"There Were Ten in a Bed"
"One, Two, Buckle My Shoe"
"Five Little Monkeys"
"Five Little Pumpkins"
"One, Two, Three, Four, Five"
"This Old Man"
"One Potato, Two Potato"
"Over in the Meadow"
"A-Tisket A-Tasket"

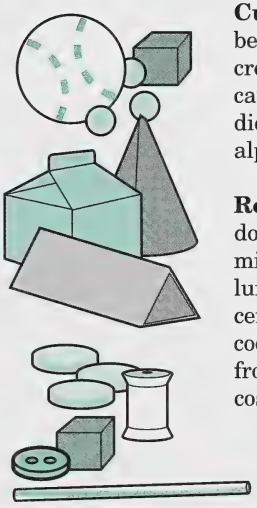


"Five Little Ducks"
"Ten in a Bed"
"Let's Do the Numbers Rumba"
"Four Hugs a Day"—Charlotte Diamond
"10 Crunchy Carrots"—Charlotte Diamond
"Old John Braddle-um"
"Five Little Frogs"
"One Man Went to Mow"
"Once I Caught a Fish Alive"
"Pease Porridge"

Solids and Shapes Manipulatives

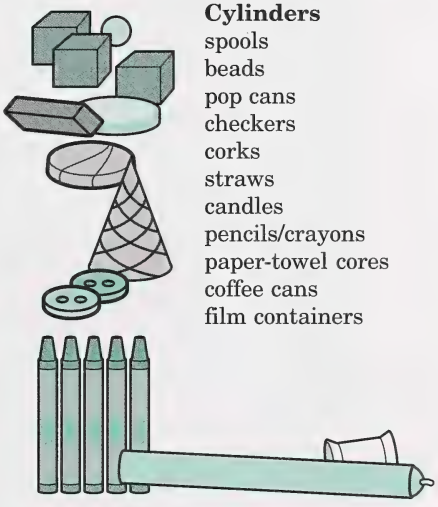
Spheres
marbles
nuts
oranges
beads
gum balls
golf balls
table-tennis balls
softballs
tennis balls

Cones
funnels
Bugles snack
ice cream cones
party hats
some paper cups
some coffee filters



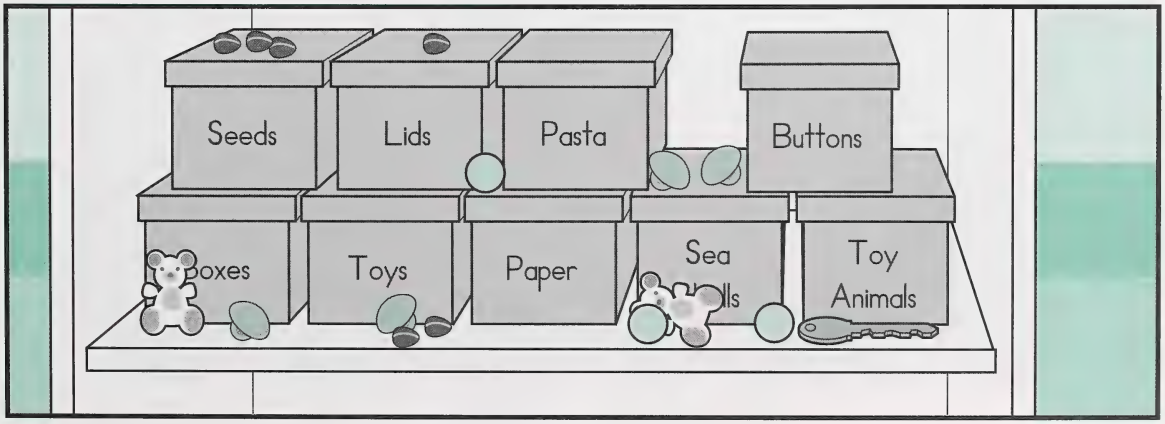
Cubes
beads
cream cartons
caramels
dice
alphabet blocks

Rectangular Prisms
dominoes
milk cartons
lunch boxes
cereal boxes
cookie boxes
frozen-food boxes
cosmetics boxes



Cylinders
spools
beads
pop cans
checkers
corks
straws
candles
pencils/crayons
paper-towel cores
coffee cans
film containers

Numbers to Ten Manipulatives



Social
Physical
Intellectual
Creative
Emotional
Home Schooling:
Teaching the Whole Child

Day 1

Calendar Time

Time recommended: 30 minutes

If your student is not registered in the accompanying Thematic program, refer to the Calendar Package for further information.

Focus for Today

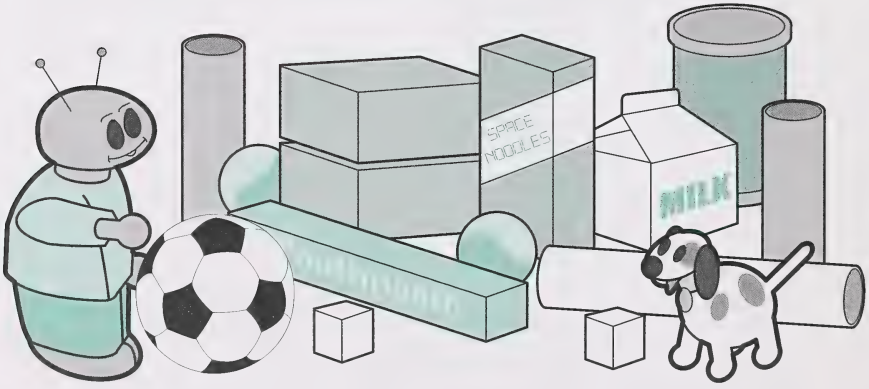
Time recommended: 45 minutes

- relating geometric solids and shapes to real-world objects
- exploring, classifying, and describing geometric solids according to not more than two attributes
- identifying and naming specific shapes, such as circles, triangles, and rectangles

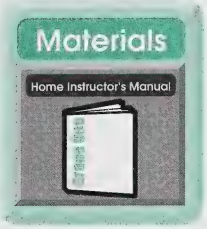
Vocabulary (spoken only)

Look for the following words throughout today's lesson. These words may be used in context and, if introduced to the student, are spoken only, so it is not necessary to review the list with the child. Students at this level are not required to read, spell, or write these words, with the exception of the number words from zero to ten.

sphere
cone
cube
cylinder
pyramid
rectangular prism
rectangle/rectangular
circle/circular
square
triangle/triangular
geometric shapes
geometric solids
geometry
geometric properties
edge
round
curved
straight sides
opposite sides
equal
length
corners
width
shorter
length
longer
lines
measure
solids
dimensions
height
flat face
roll
stack

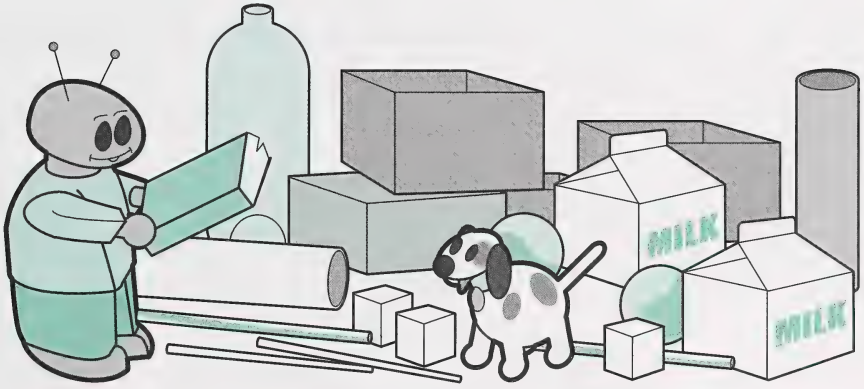


Materials Required



- box containing required materials from the master list (See the Home Instructor's Manual.)

- collection of geometric solids and shapes:
  - milk cartons
  - toilet-paper and paper-towel cores
  - boxes of various sizes
  - straws
  - toothpicks
  - sugar cubes
  - chalk
  - funnel
  - pop bottle
  - balls



- homemade modelling dough (Have the child help you make it prior to beginning the day's activities—see the recipe on the following page.)

- cereal box (or another suitable alternative)

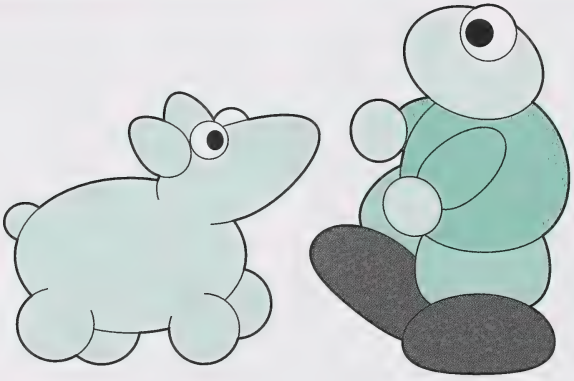
Remember to keep materials for future activities.

Homemade Modelling Dough

125 mL	water	(1/2 cup)
30 mL	salad oil	(2 tbsp.)
500 mL	flour	(2 cups)
250 mL	salt	(1 cup)
	food colouring	

Combine the water, oil, and food colouring. Mix the flour and salt together. Gradually add the liquid ingredients to the flour and salt mixture. Add more flour if necessary. Use your hands to mix and knead the dough.

Before adding the food colouring, divide the dough into small portions. Colour each portion a different colour.



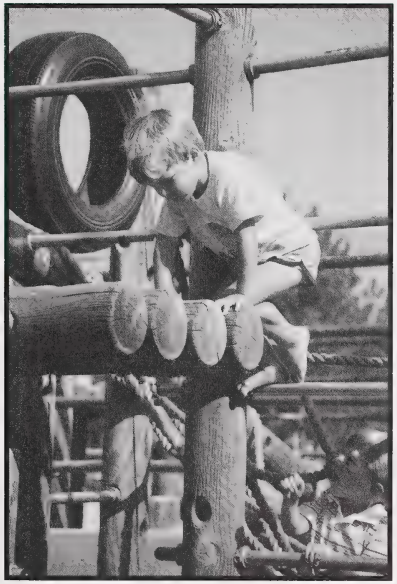
Today, you will introduce the student to **geometric solids** and their attributes. The study of **geometry** is another opportunity for the child to connect mathematics to the environment.

As the student's knowledge of geometry develops, he or she will learn to

- explore, classify, and describe solids according to two attributes
- observe and build a given solid object
- describe specific shapes as circles, triangles, and rectangles
- compare, sort, and classify shapes

The study of geometry is also about developing spatial sense. Spatial sense is the ability to picture objects mentally and to maintain accurate perceptions of the objects in different circumstances.

While the student is involved in the study of geometry, he or she will probably identify solids with common environmental terms, such as **box**, **can**, and **ball**, rather than mathematical terms, such as **cube**, **cylinder**, and **sphere**.

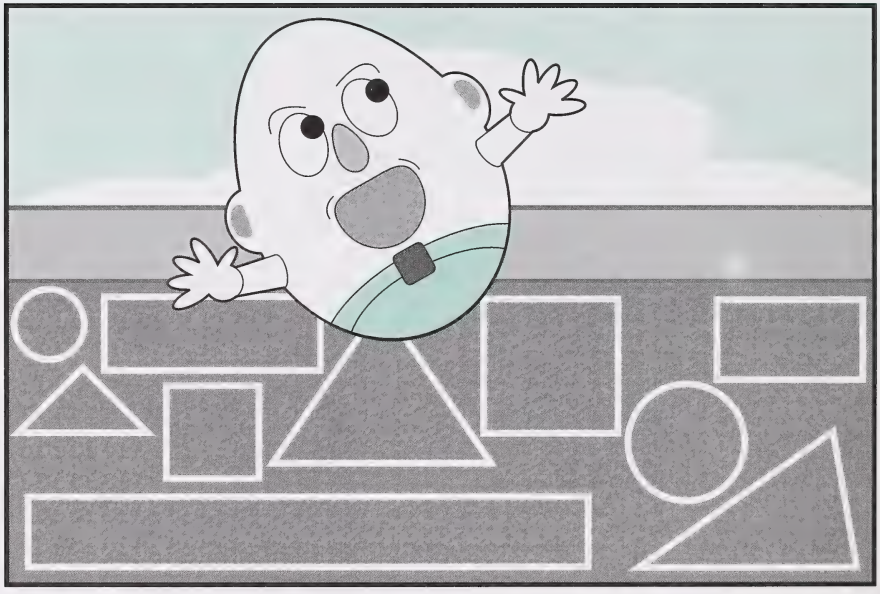


Developing the Concept

Read the following rhyme with the child a few times.

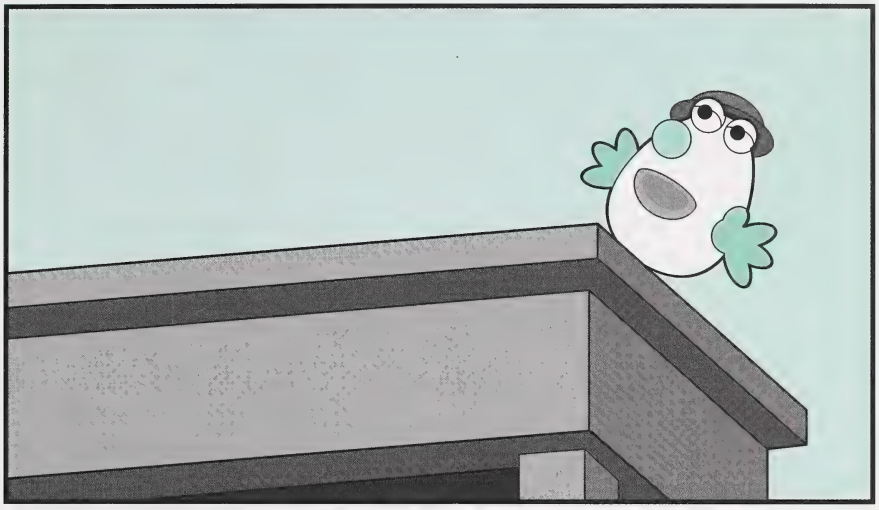
Humpty Dumpty

Humpty Dumpty sat on the wall,
Humpty Dumpty had a great fall.
All the King's horses
And all the King's men
Couldn't put Humpty together again.



Next, give the student some of the homemade modelling dough made earlier. Ask the student to make Humpty Dumpty. Use a cereal box or the **edge** of a table for a wall.

After Humpty Dumpty has been made, ask the student to act out the rhyme.



Then answer the following questions.

Why do you think Humpty Dumpty decided to sit on the wall? (Discuss.)

What happened when Humpty Dumpty sat on the wall? (He fell.)

Why did Humpty Dumpty fall off the wall?
(Discuss with the student the fact that Humpty Dumpty's **round** shape may have caused him to fall off the wall.)

Redirect the student's attention to the illustrations on the previous page, and then instruct the child as follows:

Look at Humpty Dumpty.

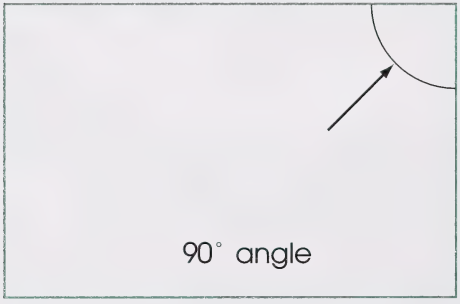
Now, look at the wall that Humpty Dumpty is sitting on.

Do some of the rocks in the wall look like shapes that you know? (Discuss.)

Based on what the student already knows, point out any unknown shapes (for example, **circles**, **triangles**, **rectangles**, and **squares**). Discuss the characteristics of each shape. Use the following definitions to assist you in your discussion.

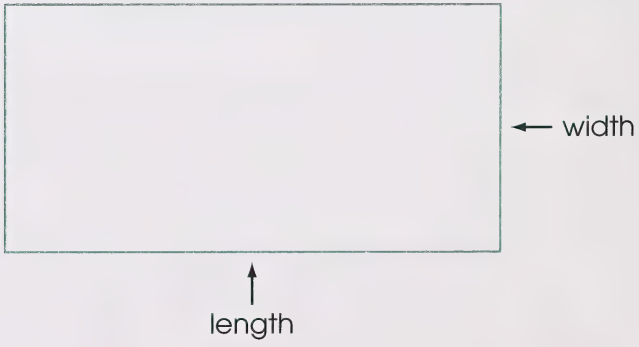
Circle a **curved** line whose ends meet to form a ring

Rectangle a shape that has four **straight sides**, **opposite sides equal** in **length**, and four **square** (90° angle) **corners**



When describing a rectangle, the term **width** is used for the **shorter** sides.

The term **length** is used for the **longer** sides.



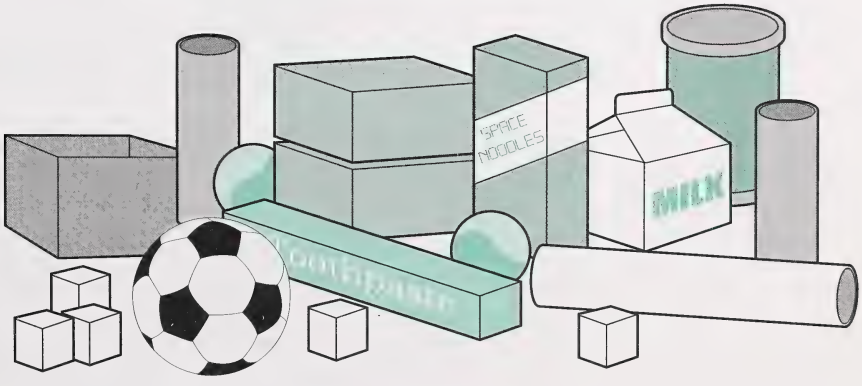
Square a rectangle that has four **equal sides**

When choosing objects to illustrate a **rectangle** or a **square**, make sure that the objects have **square corners** (**90° angles**).

Triangle a shape with three **straight sides**

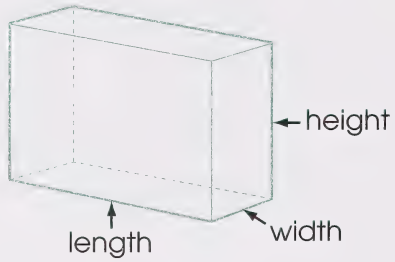
Applying the Concept

Place the geometric solids that were collected earlier (for example, boxes, balls, toilet-paper and paper-towel cores) in front of the student.



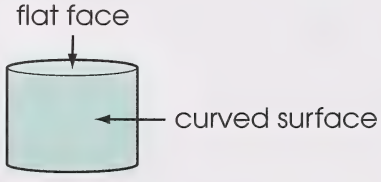
Continue with the following script:

> You have learned about **circles**, **rectangles**, **squares**, and **triangles**.
>
> Now, you are going to learn about **solids**.
>
> A **solid** has three **dimensions**: **length**, **width**, and **height**.



Place one of the geometric solids in front of the student and talk about the shapes that can be seen in the solid. For example, if the solid is an empty can, guide the student to observe that there is a circle shape at the top of the can and one at the bottom.

Next, discuss that the top and bottom of the can are flat surfaces and the middle portion of the can is a curved surface.

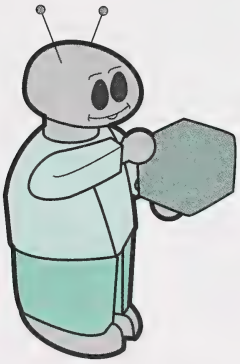


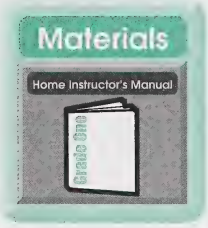
Once the description is complete, have the student use the homemade modelling dough to make a copy of the solid.

While the student is constructing the copy, review the attributes that you have already discussed and any other ones that apply. Talk about and have the student match the length, width, and height in the copy. If the size of the solid is too big to be matched, a smaller version can be made.

Next, have the child choose a solid for you to describe and copy. Encourage the child to listen carefully to your description because you might make an error.

Make the occasional mistake in your description, and if necessary, guide the student to discover the error by doing such things as emphasizing the mistake and giving clues.





Take turns with this activity until a description and copy has been made for a **sphere**, **cone**, **cube**, **cylinder**, **rectangular prism**, and **pyramid**. If you are unsure of what any of these solids look like, check the Glossary of the Home Instructor's Manual for an illustration and a definition.

Let the dough solids dry and keep them for future use.

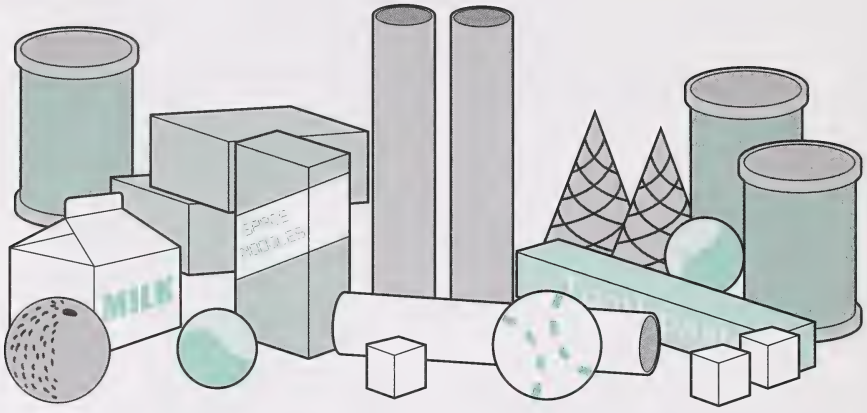
Enrichment (optional)

Enrichment activities are always optional. If you think at this point that the student needs extra help or a challenge, you may postpone the final assignment until after one or more of these activities.

Note: Use of these optional activities may require you to pace the student's progress in the rest of the module to accommodate special needs. For example, you may delay the final assignment until the student is ready for it. In that case, review the work before your student does the assignment.

Collect and Sort

For this activity, the student will need the collection of geometric solids.

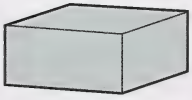


This activity will help the student learn more about the properties of the geometric solids that have been collected.

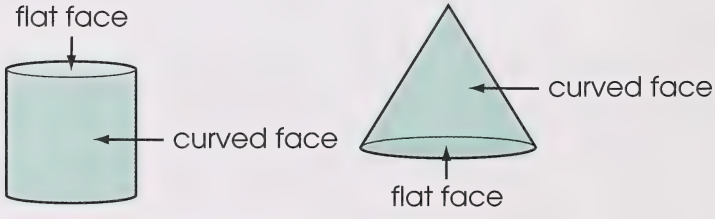
Step 1: Divide an area of the table or floor into three sections. Use the blank recipe cards to label the three sections as follows:

- **Curved Faces**

- **Flat Faces**

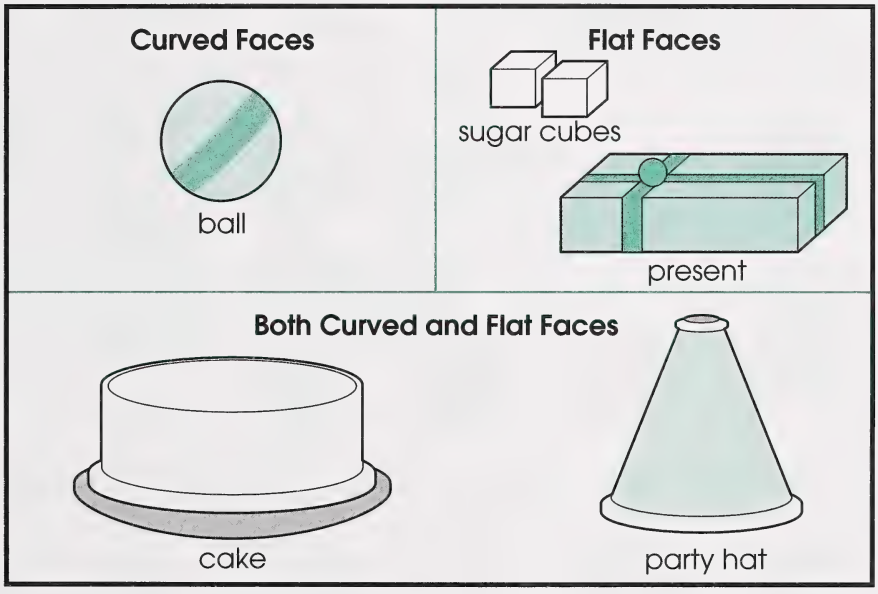


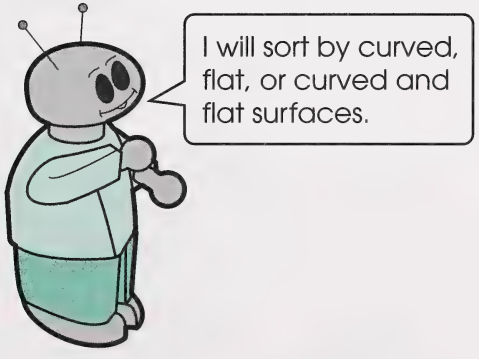
- **Both Curved and Flat Faces**



Step 2: Have the student place the collected solids on a table or on the floor. Then ask the child to **sort** the collected solids into **Curved Faces**, **Flat Faces**, and **Both Curved and Flat Faces**.

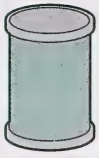
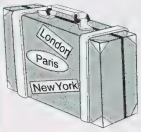
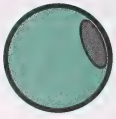
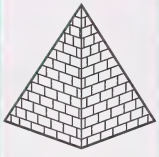
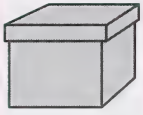
While the student is sorting the solids, discuss the sorting rules—that is, how he or she decides which group the solid belongs to.





Step 3: Now, have the student collect and sort other items from his or her environment.

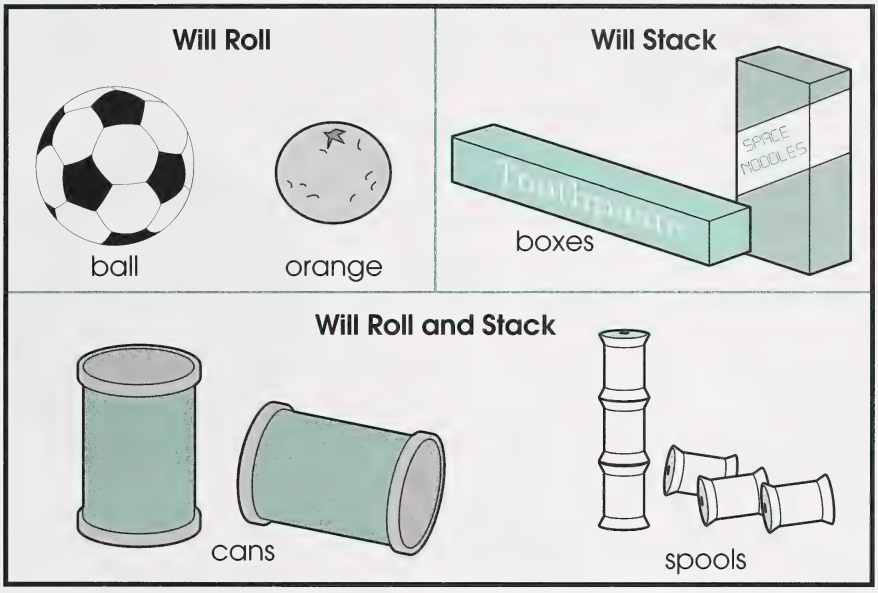
Geometric Solids in the Child's Environment

 sleeping bag	 aquarium	 marble	 umbrella	 drum	 chalk	 candle
 globe	 pot	 playpen	 sun	 soup can	 suitcase	 orange
 balloon	 log	 bead	 jar	 baseball	 funnel	 bed
 block	 mushroom	 pyramid	 box	 tent	 cone	 pencil tip

If it is **not** possible to place the item in the appropriate section, then help the child print the name of the item on a word card. For example, the sun could be used as an example of a curved face; but because the sun is in the sky, only the word card could be placed in the correct section.

sun

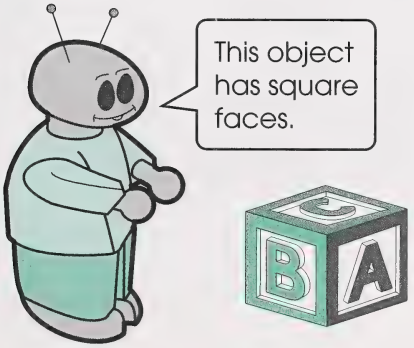
Step 4: Relabel the three sections **Will Roll**, **Will Stack**, and **Will Roll and Stack**; and then repeat Step 2. While the student is sorting the solids, remember to discuss the sorting rules.

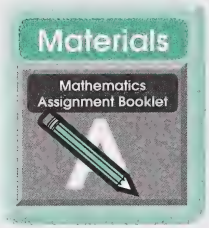


Step 5: Have the student continue to think of other properties that are representative of the geometric solids. Then take turns sorting the solids and discussing the sorting rules. For example, you and the student could group the geometric solids into

- Four-Sided Faces and Three-Sided Faces
- Square Faces and Triangular Faces

Continue this activity until the student has learned about some of the properties of geometric solids.





Turn to Mathematics Assignment Booklet 3A, and follow the directions to complete the assignment for Day 1.

Day 2

Calendar Time

Time recommended: 10 minutes

If your student is not registered in the accompanying Thematic program, refer to the Calendar Package for further information.

Focus for Today

Time recommended: 45 minutes

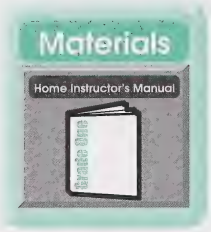
- relating geometric solids and geometric shapes to real-world objects
- exploring, classifying, and describing geometric solids according to not more than two attributes

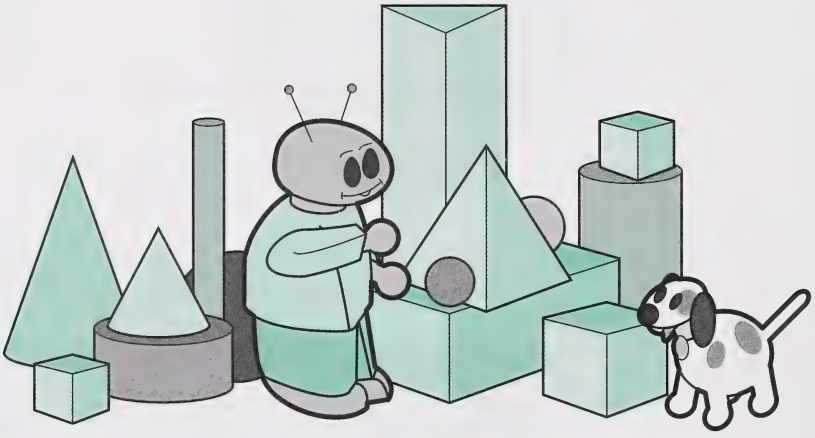
Vocabulary (spoken only)

There is no new vocabulary.

Materials Required

- box containing required materials from the master list
- collection of geometric solids and shapes (See the more detailed list on Day 1: Materials Required.)
- old magazines, flyers, and catalogues (optional)
- **Geometric Shapes** from Appendix of Home Instructor's Manual (optional)

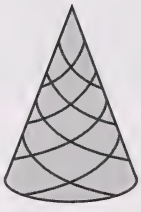


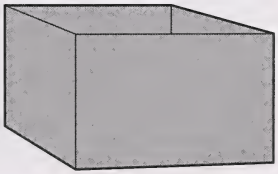


Developing the Concept

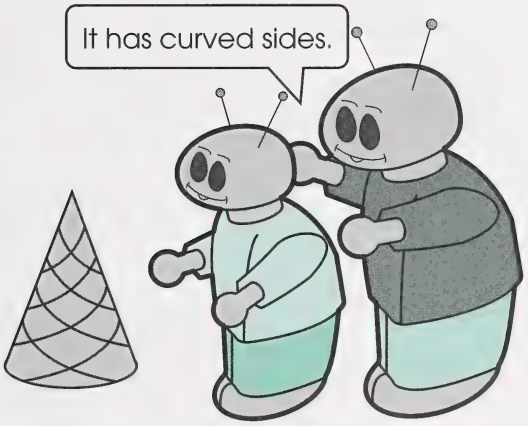
Which One Am I?

Place in front of the student three objects, such as a ball, a cone, and a box.





Describe one of the objects. For example, if you chose the cone, you could say it has curved sides, it comes to a point at the top, and it has a flat bottom.



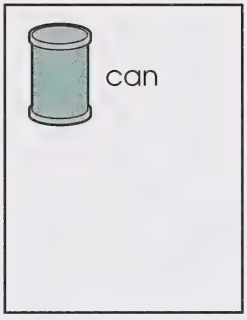
After each clue, pause briefly to give the student the opportunity to identify the solid by pointing to it.

Take turns providing clues and identifying the solid until the child has had the opportunity to identify a sphere, cone, cube, cylinder, pyramid, and rectangular prism. Check the Glossary of the Home Instructor's Manual for an illustration and a definition of these solids if necessary.

Applying the Concept

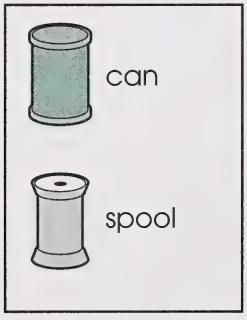
My Geometric Solid Booklet

Step 1: Ask the student to choose one of the geometric solids from the collection, and then help the child draw a picture of it at the top of an unlined piece of paper. While drawing the solid, talk about its properties. For example, a can has curved edges on the top and bottom, which form a circle; a flat surface on the top and bottom; and a curved surface in the middle portion. Label the object.



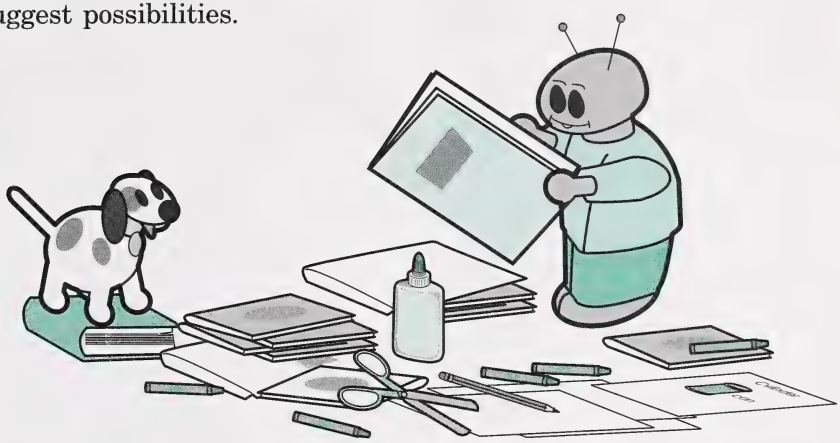
Step 2: Have the student look through old magazines, flyers, and catalogues for pictures of objects that are similar to the chosen solid.

The student can cut out and glue the pictures of similar solids onto the paper.



Alternate Activity

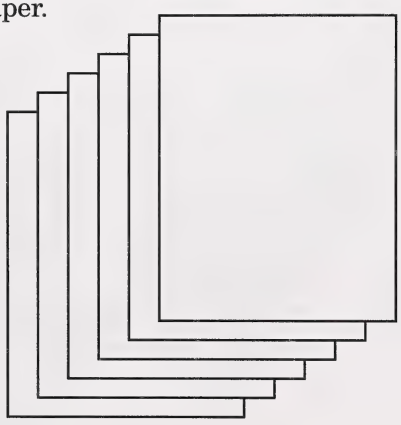
If the student cannot find pictures of objects that are similar to the chosen solid, or if he or she would prefer to draw the objects, suggest possibilities.

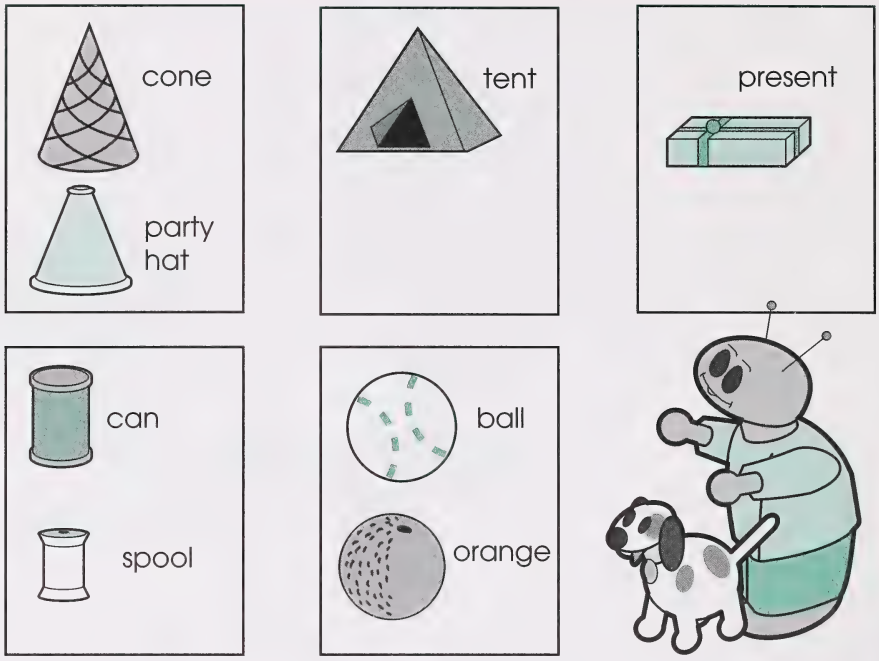


Step 3: Continue to have the student cut out or draw pictures until there are two items for each of the following geometric solids:

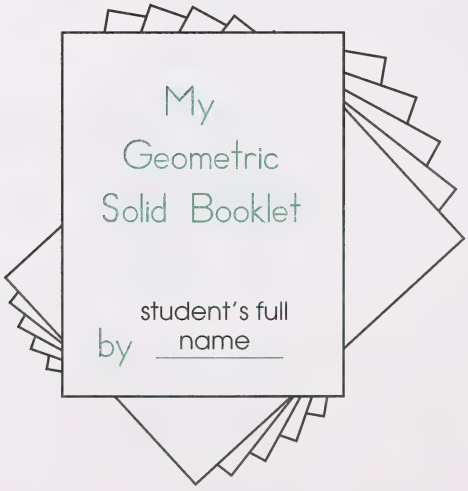
- cone
- sphere
- cube
- cylinder
- pyramid
- rectangular prism

Each geometric solid should be illustrated on a separate piece of paper.





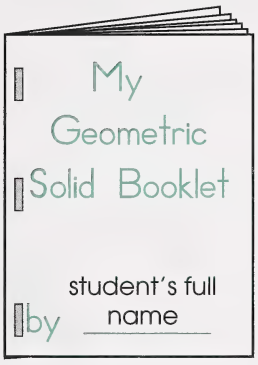
Step 4: Have the child create a cover page similar to the one shown below.

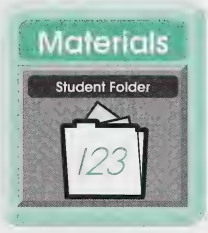


Help the child capitalize all important words as shown in the illustration.

Step 5: Staple the cover page, the six picture pages, and a back page together to make a booklet.

Before you staple the booklet together, be sure that the glue has dried.

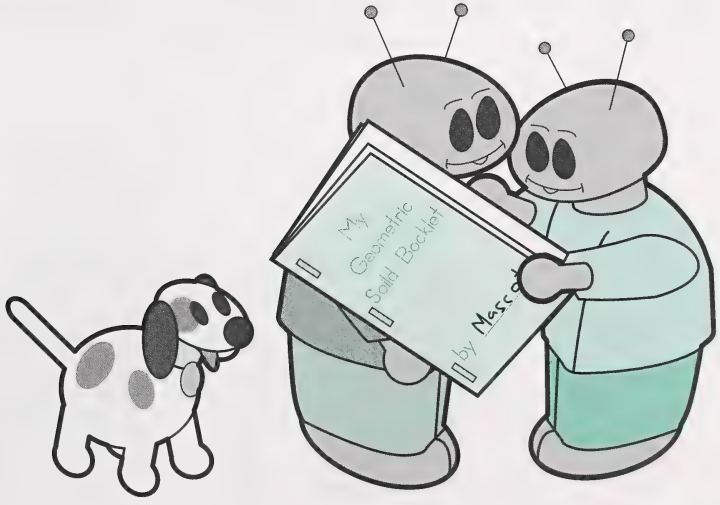




Step 6: On the back of the geometric solid booklet, ask the student to print the abbreviated form of the module and day numbers, M3D2.

Then place this booklet in the Student Folder.

Step 7: Ask the student to talk about the geometric solid booklet with family and friends.

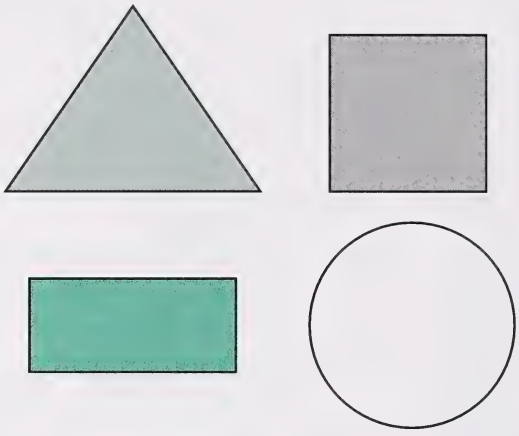


Enrichment (optional)

Memory Shape and Solid Game

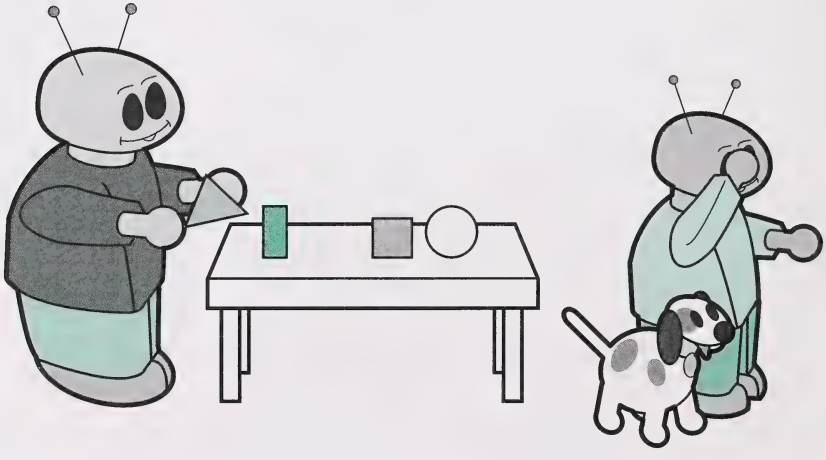
Remove and cut out the **Geometric Shapes** page from the Home Instructor's Manual.

Step 1: In front of the student, place **one** of **each** of the cut-out geometric shapes.



Step 2: Have the student study the shapes for 30 seconds.

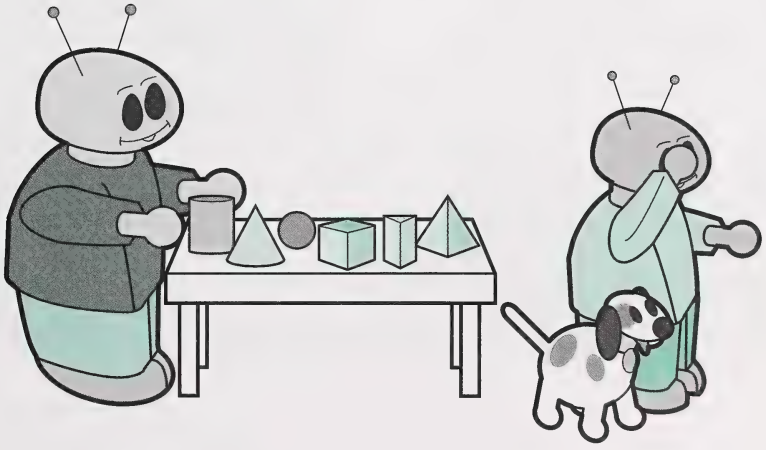
Step 3: Ask the student to turn away from the objects while you remove one of them.



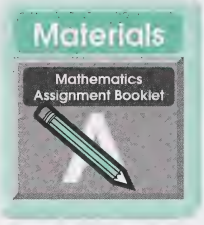
Step 4: Have the student look at the shapes once more and then using the correct geometric term, say which shape is missing. For example, if you took away the **triangle shape**, the child would need to say that the **triangle** is the missing shape.

Step 5: Take turns identifying all the missing shapes. Once all the shapes have been identified, ask the student to replace the shapes with geometric solids and then repeat Steps 1 to 4.

The student can identify the missing solid by using its environmental name (for example, can) or, if the student feels comfortable, by its mathematical name (for example, cylinder).



If the student shows signs of frustration with this activity, you may want to limit the number of geometric solids that he or she is asked to remember.



Turn to Mathematics Assignment Booklet 3A, and follow the directions to do Day 2: Assignment 1.

Next, follow the directions to do Day 2: Assignment 2.

Then complete Day 2: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, which geometric solids and geometric shapes are the easiest for the student to identify?

Day 3

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

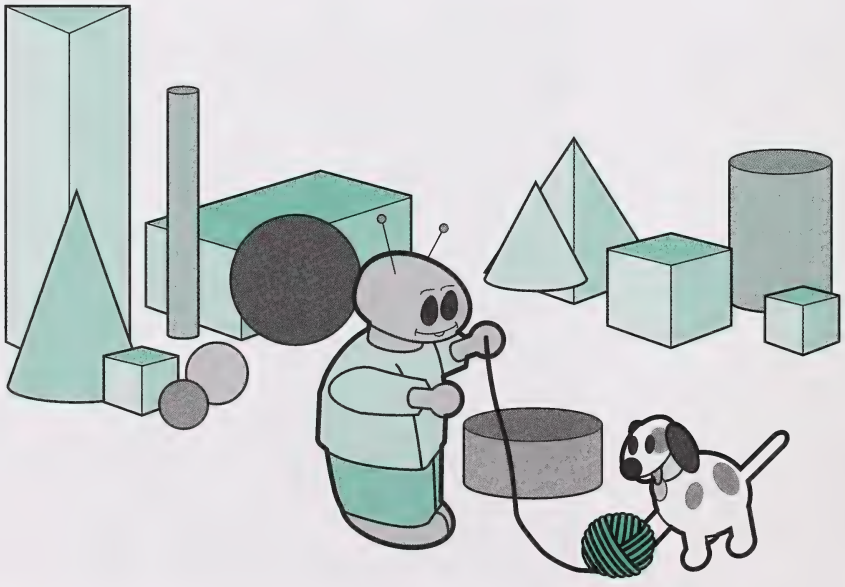
- problem-solving: relating geometric solids and geometric shapes to real-world objects
- identifying similarities and differences in geometric solids
- problem-solving: sorting geometric solids

Vocabulary (spoken only)

skinny
alike
different
size
space
geometric solid
same
between

Materials Required

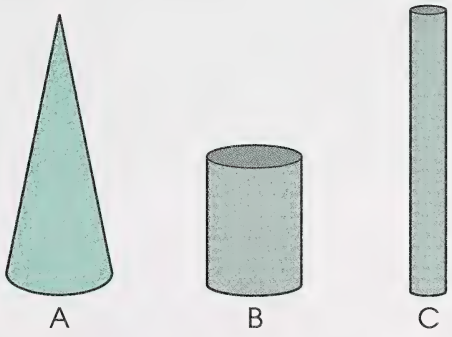
- box containing required materials from the master list
- collection of geometric solids and shapes (See the more detailed list on Day 1: Materials Required.)
- ball of yarn
- old magazines and catalogues (optional)



Developing the Concept

Which One Doesn't Belong?

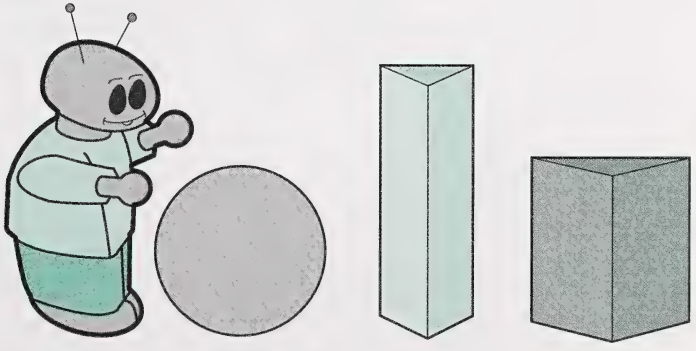
Put out three solids similar to the ones shown below:



Ask the student which solid doesn't belong with the other two. Since there are many ways to solve this problem, be ready to encourage lively discussion. For example, your student may say that **A** doesn't belong because it has a point, or that **B** doesn't belong because it's shorter, or **C** doesn't belong because it is **skinny**.

Base the final decision on a feature that separates one solid from the other two.

Continue to explore which one doesn't belong in a grouping of three solids until the student has had the opportunity to think about the concepts of **alike** and **different**.



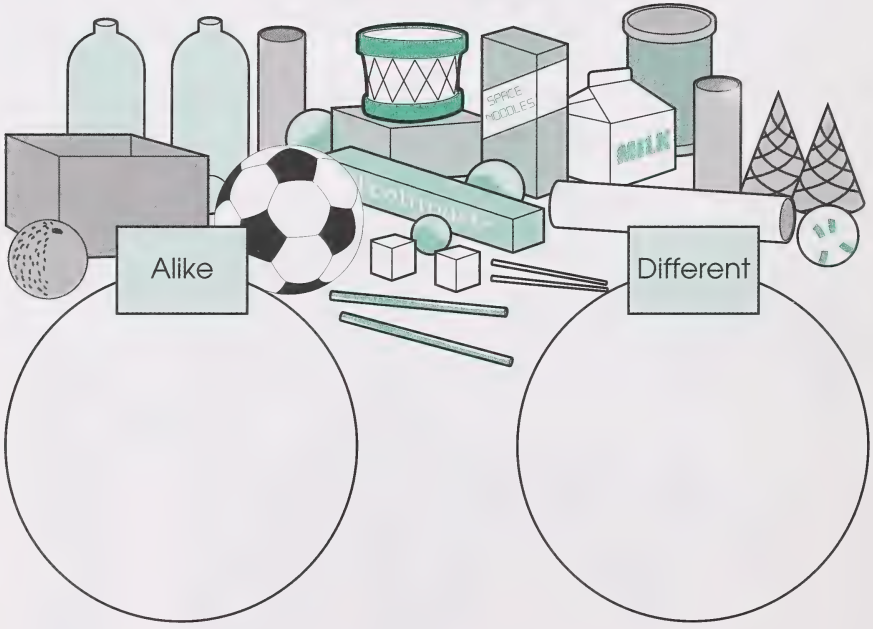
Applying the Concept

While the student is involved in the following acitivity, observe how he or she sorts the solids.

Is the student able to recognize solids regardless of size differences and how they are placed (for example, upside down, sideways)?

On the floor, place all the geometric solids that you have gathered or constructed for Days 1 and 2. With two long pieces of yarn, make two circles on the floor, similar to the ones shown below. Notice the **space** between the circles.

Make the labels **Alike** and **Different** for the circles on blank recipe cards.



Pick out one solid from the student's collection of solids, and place it **between** the two circles.

Then, instruct the child as follows:

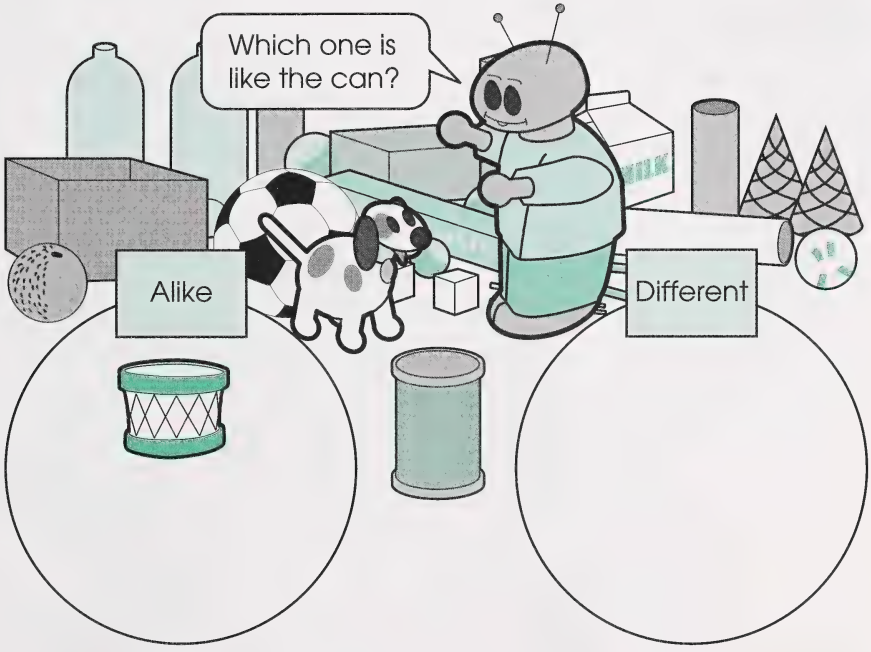
This is a (environmental name or mathematical name).

Find another **geometric solid** that is like this one.

Your solid does **not** have to be the **same size**.

Place the solid that looks **alike** in the circle that says **Alike**.

If the student does not know which circle is labelled Alike, focus the child's attention on the beginning letters and sounds of the words **Alike** and **Different** for clues.



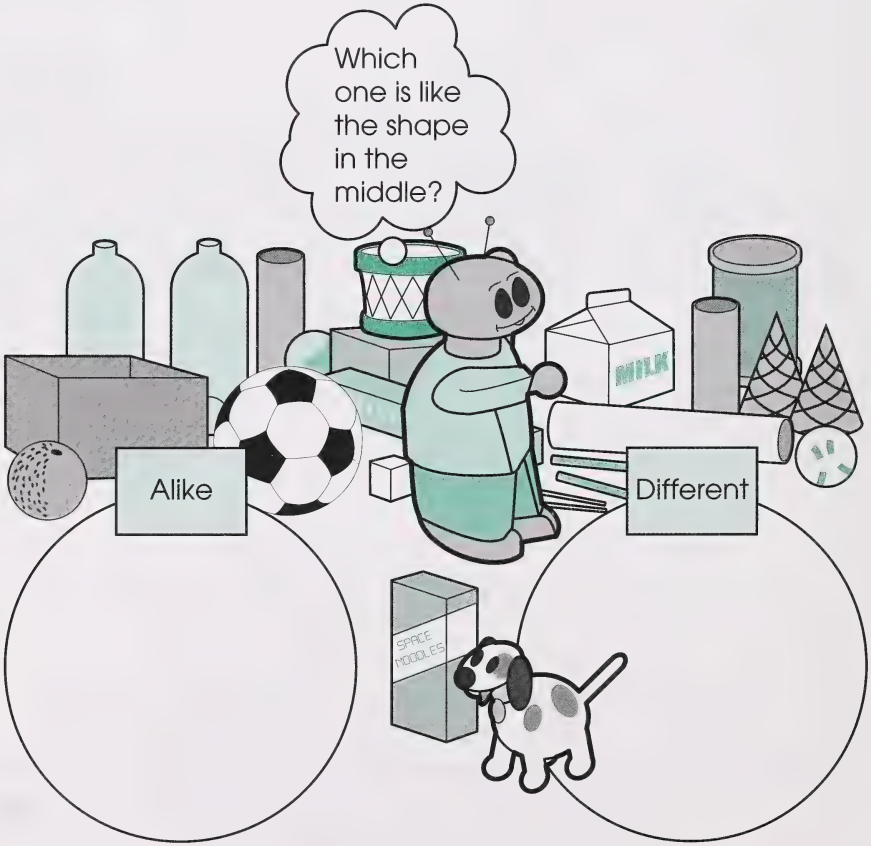
Help the student base his or her choices on the solids that share more than one property. For example, if the child picks a solid that shares only a curved surface with the chosen solid, begin by talking about the similar property. Then, focus the student's attention on a solid that shares several of the same properties.

Once the student shows a good understanding of solids that are alike, continue with the following script:

> Now, I would like you to find a geometric solid that is **different** from the solid that I have placed **between** the two circles.
>
> Place the solid in the circle that is labelled **Different**.

Have the student select a solid that is different from the one between the two circles and then explain why it is different.

Take turns choosing a solid to place between the two circles and finding **Alike** and **Different** solids until the student has a working knowledge of these concepts.



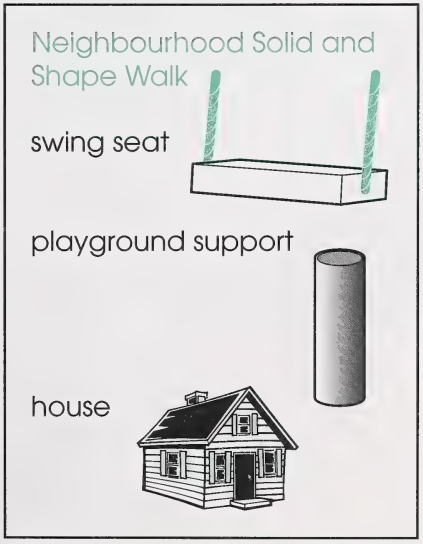
Enrichment (optional)

1. Neighbourhood Solid and Shape Walk

Step 1: Walk through the neighbourhood with the student and look for geometric solids and shapes. Talk about the solids and shapes that you see.

Step 2: After completing your walk, talk about and list the names of geometric solids and shapes that you saw. The student may also add some illustrations, either drawn or cut out from catalogues or magazines.

Step 3: Display the list at the student's eye level. Have the child share the list with family and friends.

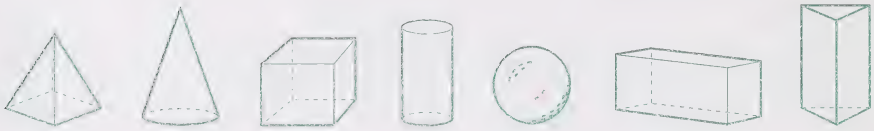


2. Guessing Game

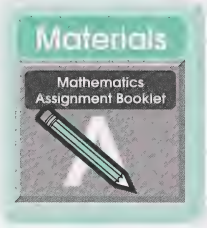
Step 1: On a piece of paper, print three clues that describe a chosen geometric shape or geometric solid. As an example, three clues follow:

- It has three sides.
- Its name begins with the letter *T*.
- It has three corners or points.

Step 2: Read the clues aloud, and then ask the student to guess which geometric shape or solid is being described.

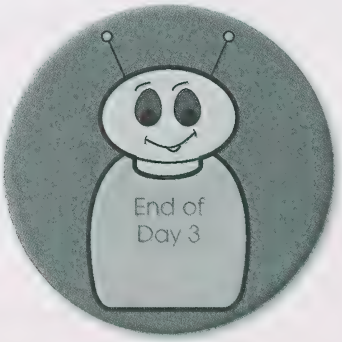


Step 3: Take turns creating clues and guessing which geometric shape or solid is being described.



Turn to Mathematics Assignment Booklet 3A, and follow the directions to do the assignment for Day 3.

Then complete Day 3: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, was it easy for the student to pick out geometric solids that are the same and ones that are different?



Day 4

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

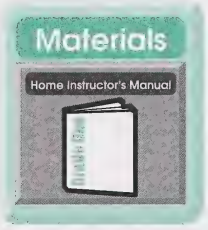
Time recommended: 45 minutes

- identifying similarities and differences in geometric solids
- creating a map using geometric solids
- identifying geometric solids in a composite picture

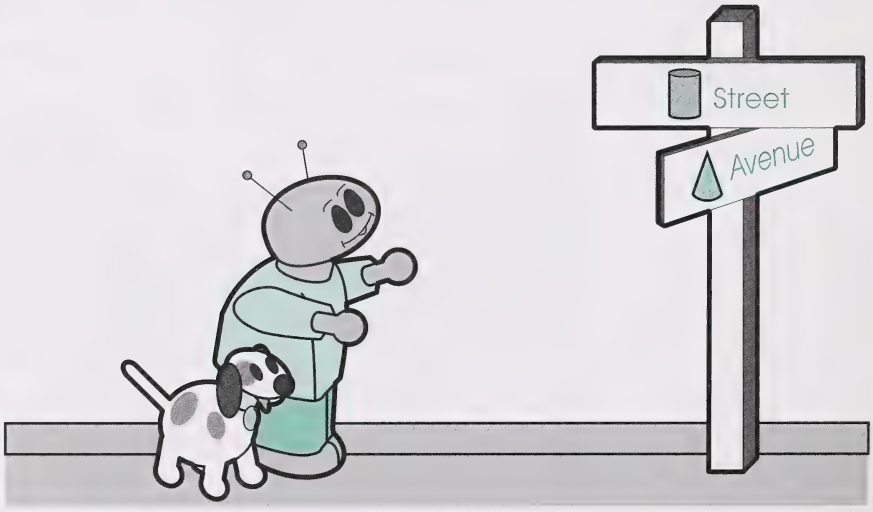
Vocabulary (spoken only)

streets	solid creature
avenues	like
crescent	picture graph
roads	column(s)

Materials Required



- box containing required materials from the master list
- collection of geometric solids
- large sheet of paper or cardboard (approximately 100 cm by 50 cm)
- collection of geometric shapes cut out from the Appendix of the Home Instructor's Manual (optional)
- yarn or strips of paper (optional)
- craft material, such as netting, lace, ribbon, or wool (optional)

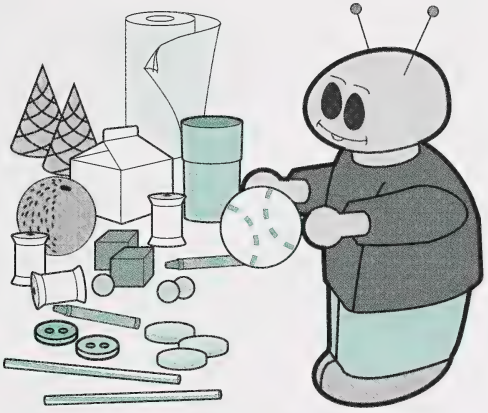


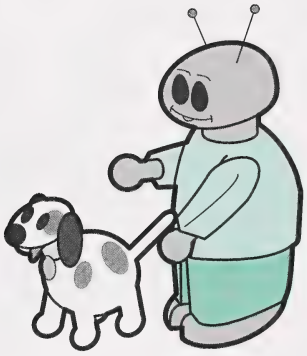
Developing the Concept

Can You Find an Object Like Me?

Place the collection of solids in a large box. Pick out one solid at a time from the box and place it in front of the student.

Ask the student to point out other items around the house or outside that have the same shape. You may get disagreements about which are alike. Discuss the similar attributes, and encourage the student to discover solids that have more in common than others.





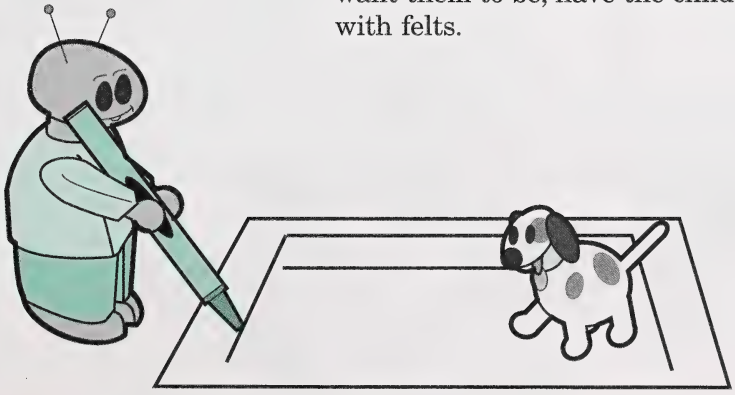
Applying the Concept

A large piece of paper or cardboard is best for this activity.

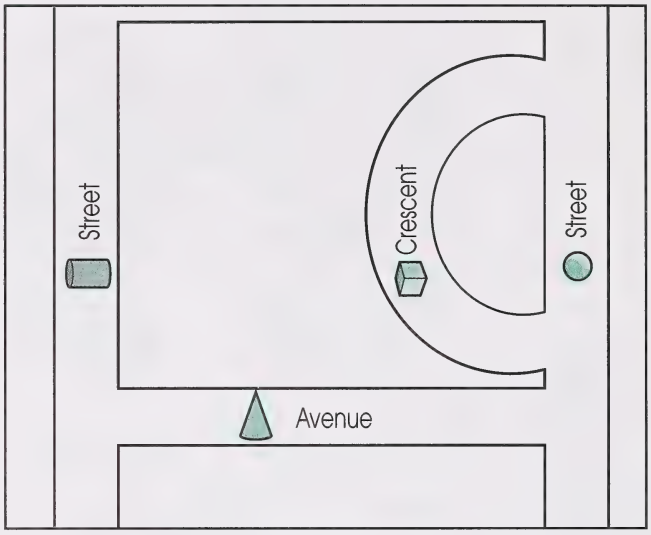
Geometric Solid Town

Step 1: With the student's help, draw **streets**, **avenues**, **crescents**, and **roads** on the paper or cardboard.

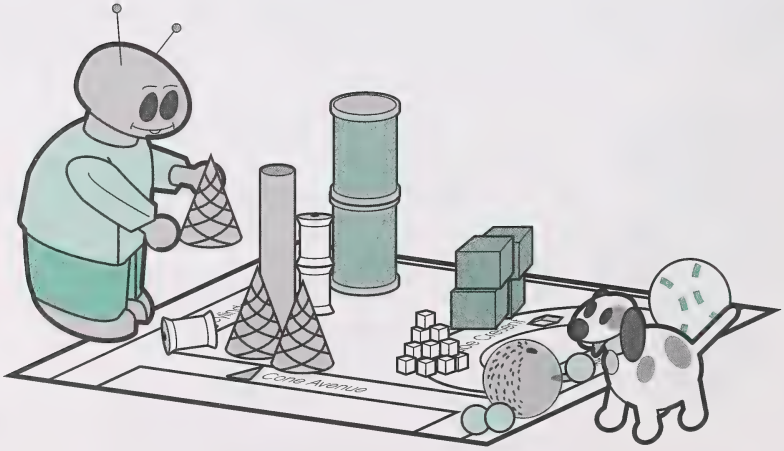
At first, make the marks with pencil; and then once you and the student know that your marks are placed the way you want them to be, have the child go over the pencil marks with felts.

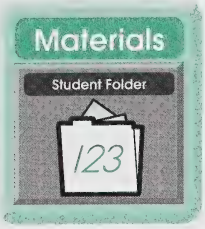


Step 2: Give each roadway a name that describes a geometric solid. You can draw the solid, use the environmental name, or use the mathematical name, depending on the student's level of understanding. For example, a roadway could be Cube Crescent, Box Crescent, or a picture of the cube could be drawn.

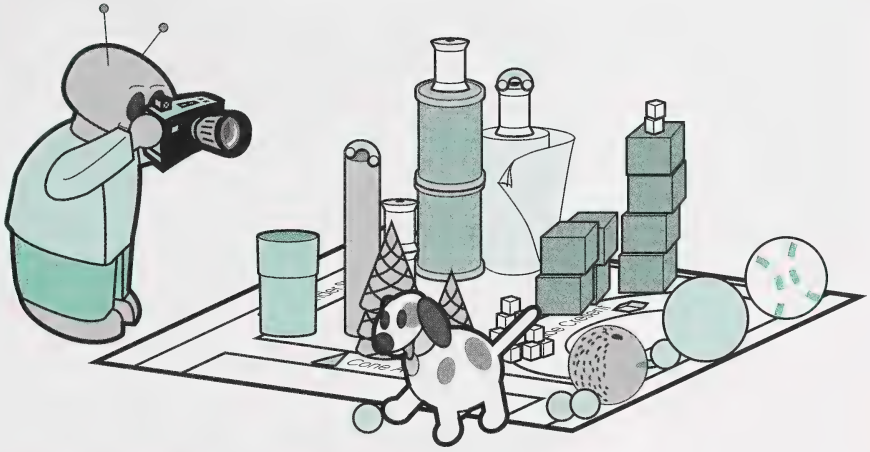


Step 3: Ask the student to use items from the collection of solids to make buildings for each roadway. For example, Cube Crescent would have only cubed-shaped buildings. Help the student gather and make additional solids to add to the town map. Assist the child whenever necessary.





Step 4: When the student's geometric town is completed, the student may take a few photographs of it to send to the teacher. If photographs are not possible, you may want to write a brief description of the town to send to the teacher.



Enrichment (optional)

1. Geometric Solids Creature

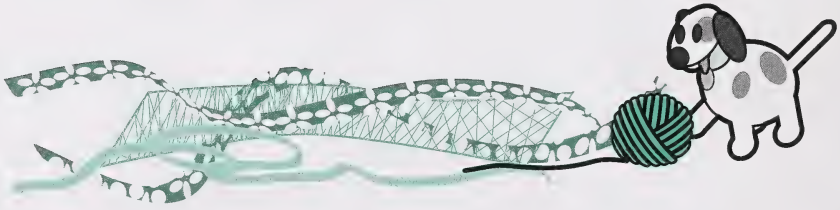
During this activity, observe whether the student does the following when putting the shapes together:

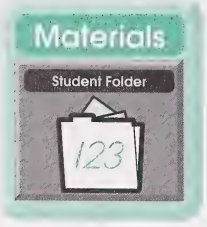
- attaches sides together that have the same shape and size
- attaches single edges together
- joins corners or points together using a variety of creative methods (for example, inserting pipe cleaners through a box so it can be attached to another item)

Step 1: Have the student look around the house and the yard for geometric solids that can be used to create a solid creature.

Step 2: Ask the student to join the collected geometric solids to form the head(s), body, arms, and legs.

Step 3: Encourage the student to add interesting details to the creature by using a variety of craft items (for example, netting, lace, ribbon, wool).





Step 4: When the child's geometric solids creature is completed, the student may take a few photographs of it to send to the teacher. If photographs are not possible, you may want to write a brief description of the creature to send to the teacher.

2. Shape Match

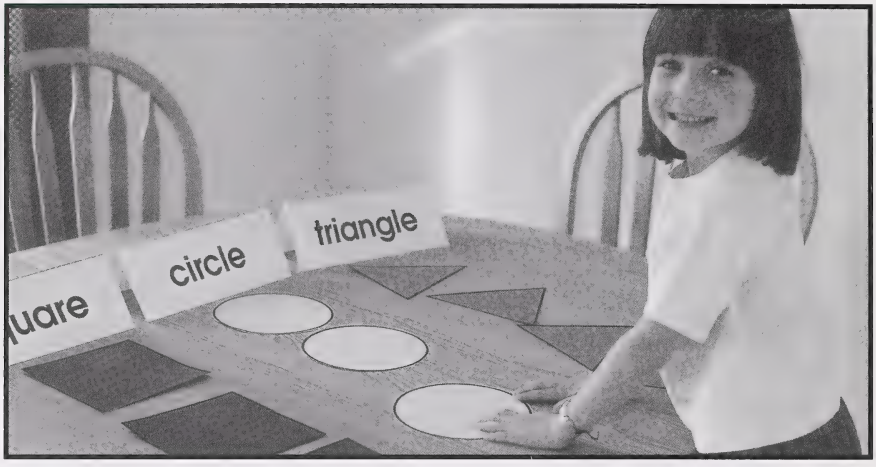
While the student is involved in the following activity, observe whether he or she

- recognizes the shape regardless of how it has been placed (for example, upside down, sideways)
- recognizes shape regardless of size
- recognizes triangles regardless of various lengths of sides

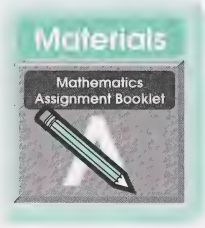
Step 1: With yarn or strips of paper, divide the table or floor into four sections, as shown in the illustration below. Then, label each section by placing a **circle**, **rectangle**, **square**, and **triangle** at the top of it.

Step 2: Place the geometric shapes in a box. Then, have the student select a shape and place it in the correct section to make a shape match.

Step 3: Ask the student to describe how the shape is **like** the matching shape and how it is different.

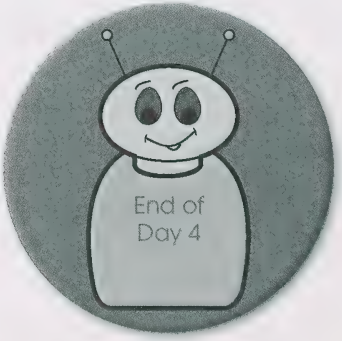


Step 4: Take turns placing the remainder of the geometric shapes in the appropriate sections and describing how they are alike and different.



Turn to Mathematics Assignment Booklet 3A, and follow the directions to do the assignment for Day 4.

Then complete Day 4: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, did the child enjoy using geometric solids to create a town map?



Day 5

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

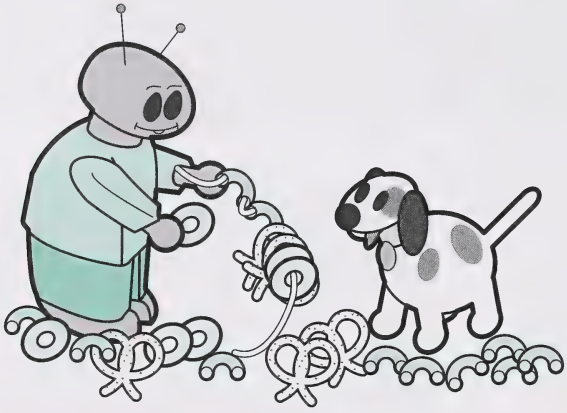
- problem solving: identifying, extending, and constructing patterns

Vocabulary (spoken only)

patterns/patterning	extend
identify	groups

Materials Required

- box containing required materials from the master list
- collections of blocks, geometric shapes and solids, and various other kinds of counters
- various types of shapes of pasta (optional)
- pretzels, licorice, cereal, and other suitable items (optional)
- string or cord (optional)



Developing the Concept

Patterning, the repetition of a sequence, is a skill that touches virtually every aspect of the child's everyday experiences. For example, the child who wants a story read just before bedtime is establishing a **pattern**.

Activities that require children to **identify** details of a pattern and to **extend** a pattern help children connect many ideas in mathematics and use mathematics in a variety of ways.

Before looking for patterns in pictures, the student will be involved in constructing patterns like the ones shown in the following illustration:

Continued . . .

Pattern Groups

Colour:

red yellow red yellow red yellow

Shape:

triangle square triangle square triangle square

Sound:

oh no oh no oh no

Position or Action:

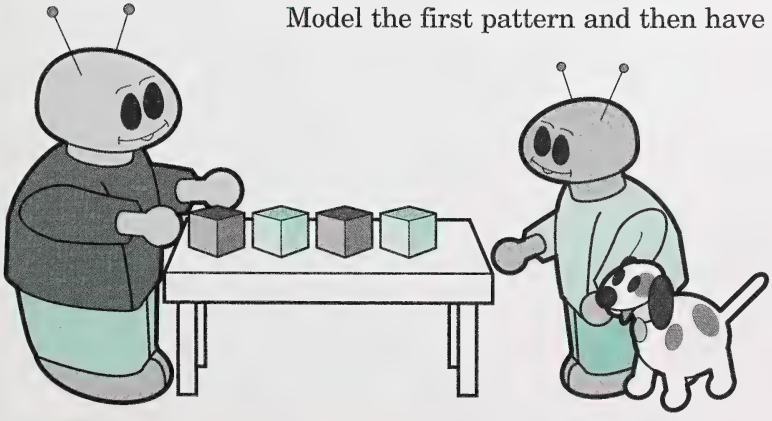
stand sit stand sit stand sit

Number:

four five four five four five

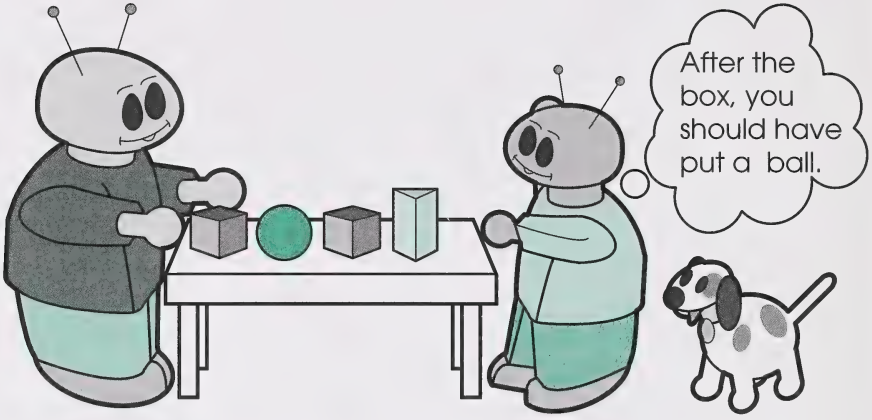
Take turns making approximately four patterns from each group noted in the Teaching Tip.

Model the first pattern and then have the student copy it.



Next, have the student construct a pattern and you copy it.

Check the student's patterns for correctness, and have the child check yours as well. Make an occasional error so you will have the opportunity to monitor the student's understanding of patterns.



Applying the Concept

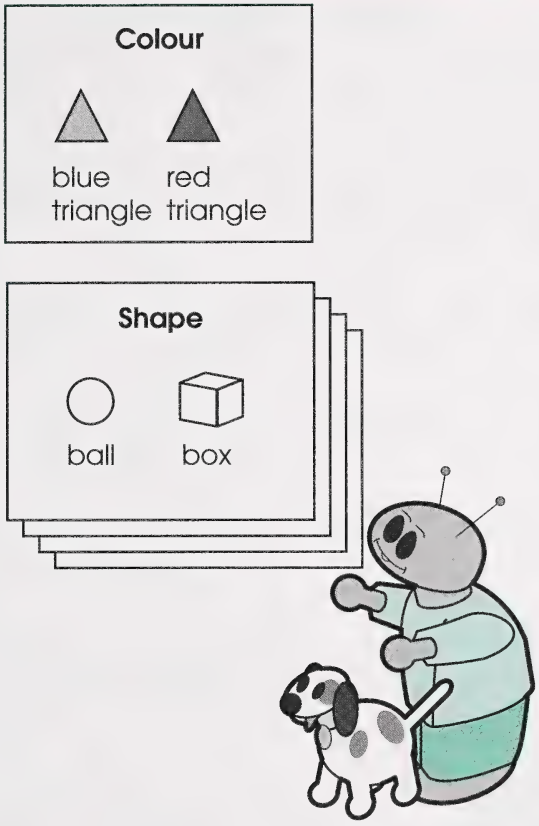
My Pattern Booklet

Step 1: Take out five sheets of unlined paper for the inside pages of the booklet and two sheets of coloured construction paper for the cover and back page.

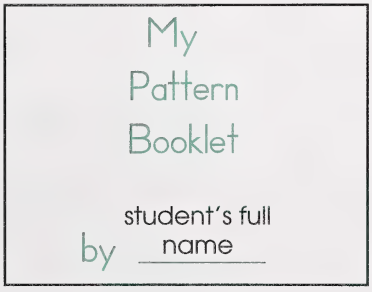
Step 2: On each unlined sheet of paper, have the student illustrate and label one of the pattern groups (colour, shape, sound, position or action, and number.)

Colour	Position or Action	Number

Shape	Sound

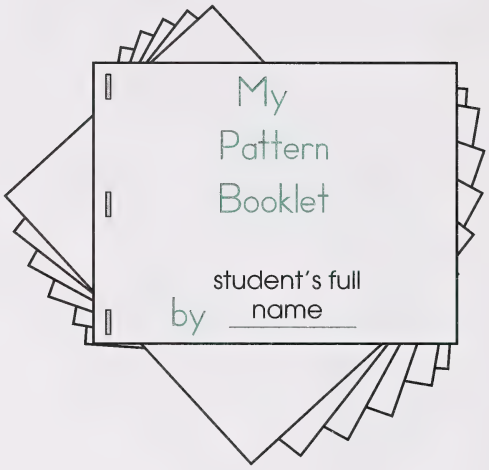


Step 3: Using one of the sheets of construction paper, have the student make a cover page similar to the one shown below.

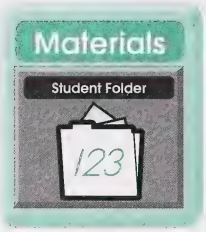


Have the student capitalize all important words.

Step 4: Place the cover page on top of the five different pattern pages, and add the back page. Then staple the pages together.

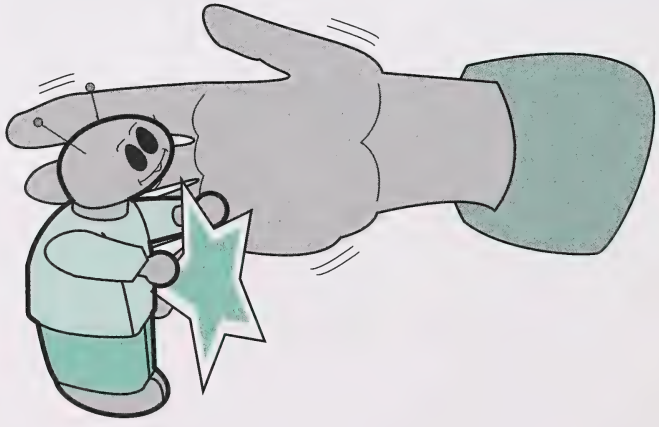


On the back of the booklet, have the student print the abbreviated form of the module and the day numbers, M3D5.



Step 5: Encourage the child to talk about the patterns in the booklet with family and friends.

Step 6: After the student has shared the booklet with others, place it in the Student Folder.



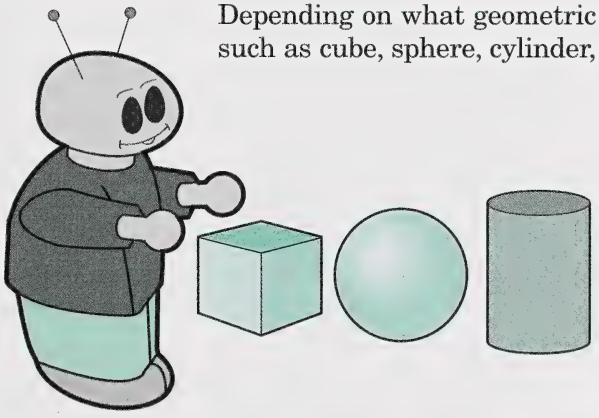
Enrichment (optional)

Pattern Walls

In front of the student, display all the geometric solids that you have collected from previous days. Then instruct the child as follows:

> With this collection of geometric solids, I will build a wall for Humpty Dumpty.
>
> My wall will be special because I am going to follow a **pattern** to build it.
>
> Watch what I do, and then I would like you to **identify** my **pattern**.

Depending on what geometric solids are available, repeat a pattern, such as cube, sphere, cylinder, cube, sphere, cylinder . . . .



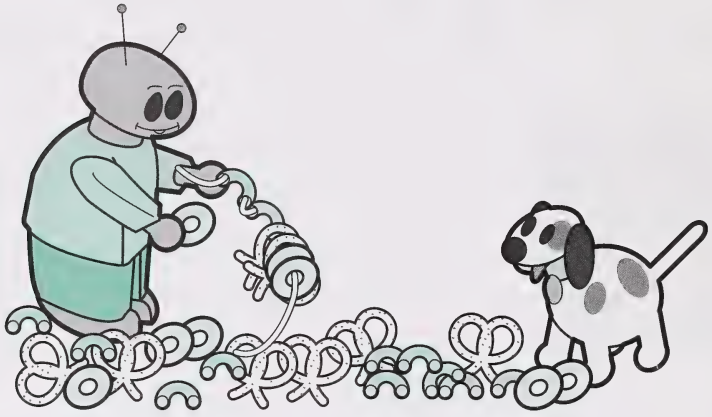
Have the student identify your pattern. If necessary, assist the child in his or her observations.

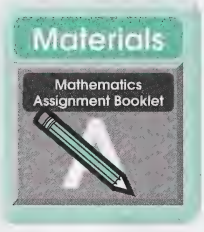
At this stage of the student's development, keep the pattern to a repetition of only two or three items.

After your pattern has been identified, have the student build a wall using another pattern.

Take turns building pattern walls until the student has had the opportunity to practise constructing and identifying geometric solid patterns.

Continue with patterning by having your student string whatever materials are available onto a piece of string or cord. For example, you could have the child string various kinds of pasta, pretzels, or cereal onto a cord.





Turn to Mathematics Assignment Booklet 3A, and follow the directions to do Day 5: Assignment 1.

Next, follow the directions to do Day 5: Assignment 2.

Then complete Day 5: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, was it easy to identify and extend patterns?

Day 6

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- identifying and constructing sets of zero to six members
- printing the numbers **0** to **6** and the words **zero** to **six**

Vocabulary (spoken only)

six
row

Materials Required

- box containing required materials from the master list
- collection of old envelopes, postcards, greeting cards, or papers to represent letters
- basket or box
- 0 to 5 number cards
- inkpad (optional)
- zero to five number word cards

Developing the Concept

Research shows that the student will develop number sense (knowledge and understanding) in an environment where he or she is encouraged to

- work with everyday ideas and manipulative materials
- share and talk about discoveries and solutions
- construct and reconstruct different ways to show numbers

Have the student read and act out the following verse with you a few times.

Six Little Snowmen

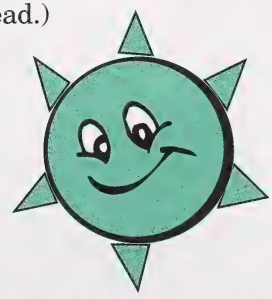
Six little snowmen standing in a row—
(Hold up six fingers.)

Each with a hat and a big red bow.
(Point to head and neck.)

Six little snowmen dressed for show—
(Hold up six fingers and then smooth clothes with hands.)

Now they are ready. Where will they go?
(Put hand across eyebrows, looking.)

Wait 'til the sun shines.
Then they will go.
(Hold arms in circle over head.)



Down through the fields with the melting snow.[1]
(Pretend to melt away.)

[1] Cynthia Holley and Faraday Burditt, *Resources for Every Day in Every Way: A Teacher's Handbook of Preschool Activities* (Torrance, CA: Frank Schaffer Publications), 73. Reprinted by permission.

Substitute other numbers from one to five, and repeat the verse.

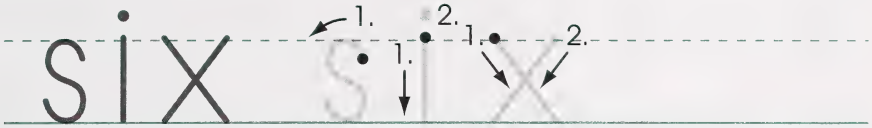
After the student has acted out the verse with each of the numbers from **one** to **five**, print the words from **zero** to **six** on a piece of paper.

Read the words together.

zero
one
two
three
four
five
six

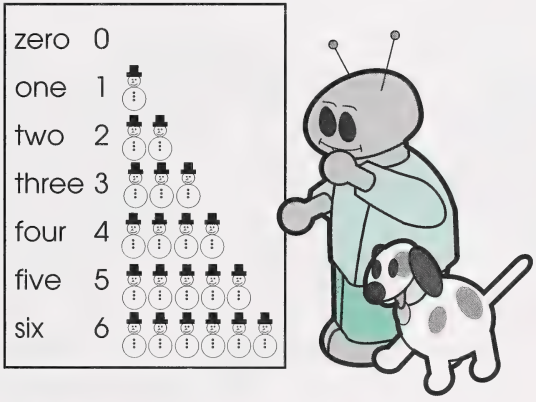
Print the number **6** on paper or a chalkboard, and have the student print this number six times.

Print the word **six**, and have the student print the word six times.



Next, randomly print different number words, and ask the student what the word says. Assist as needed.

When the student identifies a number word, have him or her print the number beside it, and then draw a matching number of snowmen to the right of the number.



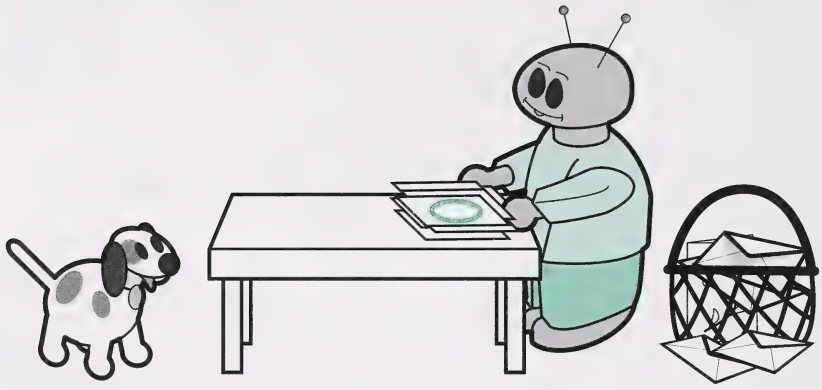
Applying the Concept

For the following activity, ask the student to help you collect old envelopes, postcards, greeting cards, or papers to represent letters.

Place these letters in a box or basket in the centre of your work area.

On one blank recipe card, print the number **6**; and on a second card, print the word **six**.

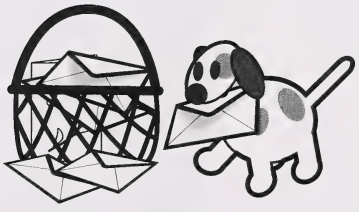
Include the number 6 card with the 0 to 5 number cards. Shuffle the cards, and then them place face down beside the container of letters.



Have the student pick a number card, and then use the number in the following verse. For example, "I wrote **6** letters to my friend, ..."

A-Tisket A-Tasket

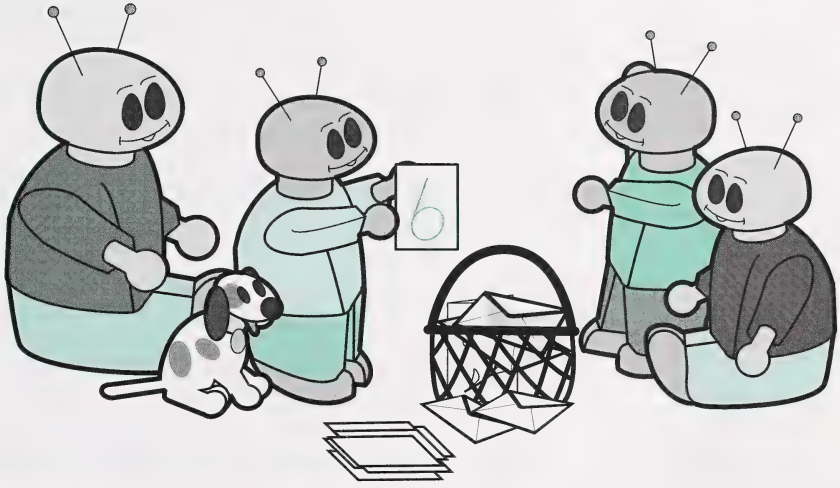
I wrote _____ letters to my friend,
And on the way I dropped them.
A little doggy picked them up,
And put them in its pocket.



Invite other family members to join you as you say or sing the verse.

While the verse is being sung or said, pass the chosen number card around. When the verse ends, the player holding the number card takes that many letters from the basket.

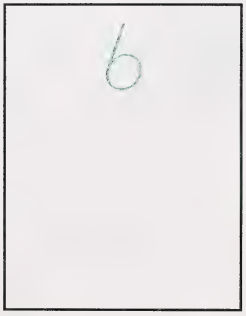
Take turns playing this game until the student has had the opportunity to identify sets of zero to six members. Repeat the game using the zero to six word cards.



Enrichment (optional)

1. Sets of Fingerprint Characters

Step 1: Print a number from 1 to 6 at the top of a blank sheet of paper.



Step 2: Have the student make a matching set of fingerprint characters.

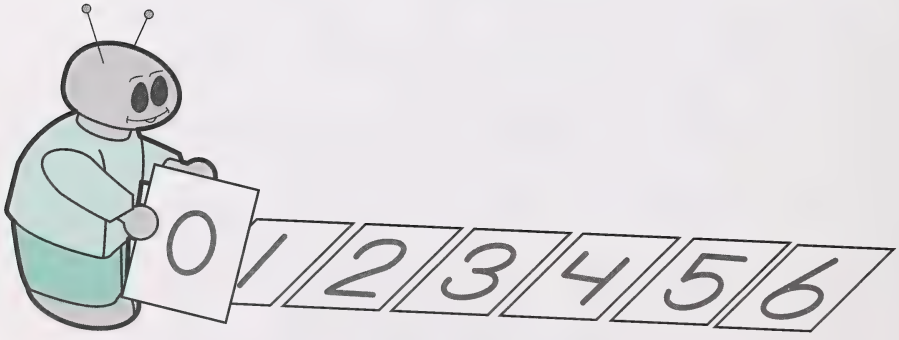
Step 3: Continue until fingerprint pictures have been made for each of the numbers from 1 to 6.

You can choose to either display the pictures around the home or gather them together in booklet form.

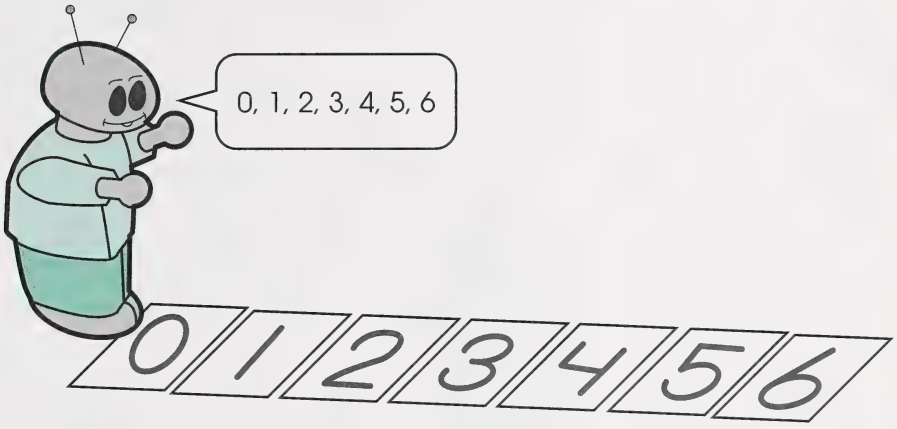
2. What's Missing?

For this activity, the student will need the 0 to 6 number cards and the zero to six word cards.

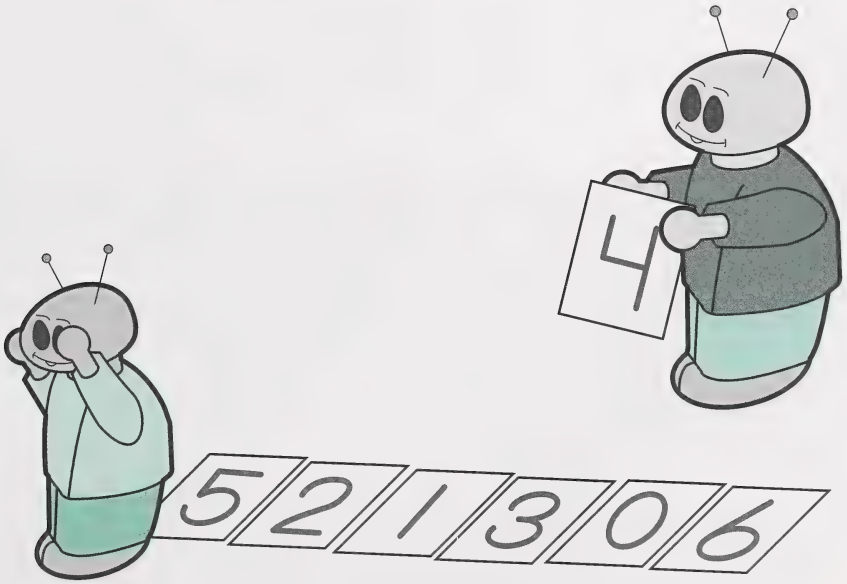
Step 1: Take turns shuffling the 0 to 6 number cards and then putting them in order.



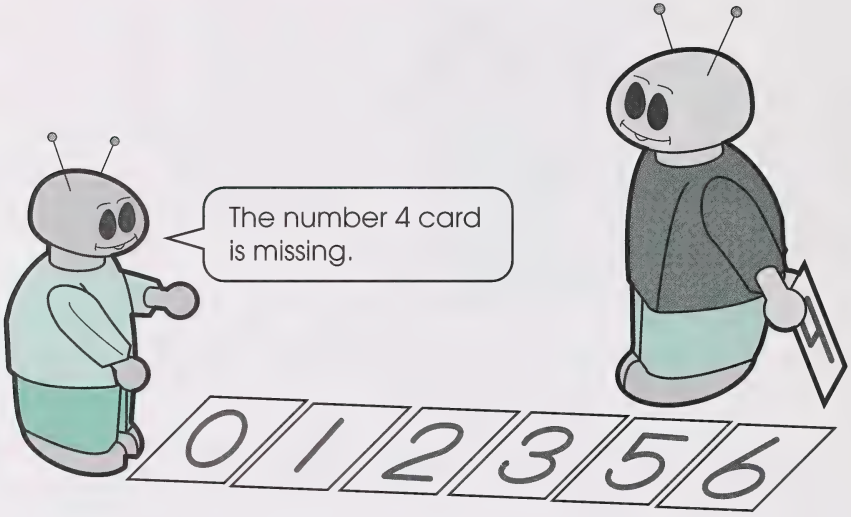
Step 2: Read the sequence of numbers aloud.



Step 3: Mix up the number cards, and then ask the student to close his or her eyes while you remove one card.

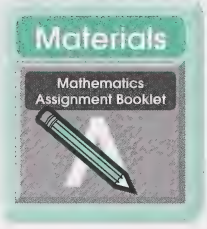


Step 4: Have the student place the number cards in order and figure out which one is missing.



Step 5: Take turns hiding number cards and figuring out the missing number until the student has the opportunity to practise putting the number cards in order.

Repeat Steps 1 to 4 with the number word cards.



Turn to Mathematics Assignment Booklet 3A, and follow the directions to do the assignment for Day 6.

Day 7

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- identifying and constructing sets of zero to eight members
- printing the numbers **7** and **8**
- printing the words **seven** and **eight**
- understanding the concepts of one more, one less, and equivalence

Vocabulary (spoken only)

right hand
six
left
remaining
left hand
seven
greater
eight
one more
one less
some
one-to-one correspondence
equivalence

Materials Required

- box containing required materials from the master list
- collection of counters, such as buttons, bingo chips, or pennies
- 0 to 6 number cards
- zero to six number word cards
- eight interlocking blocks, four of one colour and four of another colour (optional)

Keep all required materials for future activities.

Developing the Concept

Today the student will be identifying and constructing sets of zero to eight members.

Sometimes, children appear to know their numbers. A closer investigation, however, might reveal that their knowledge of numbers is limited to reciting the number names in order. While this recitation is a developmental achievement and one that will help the student understand numbers, it should not be mistaken for the child's knowledge of the following number concepts:

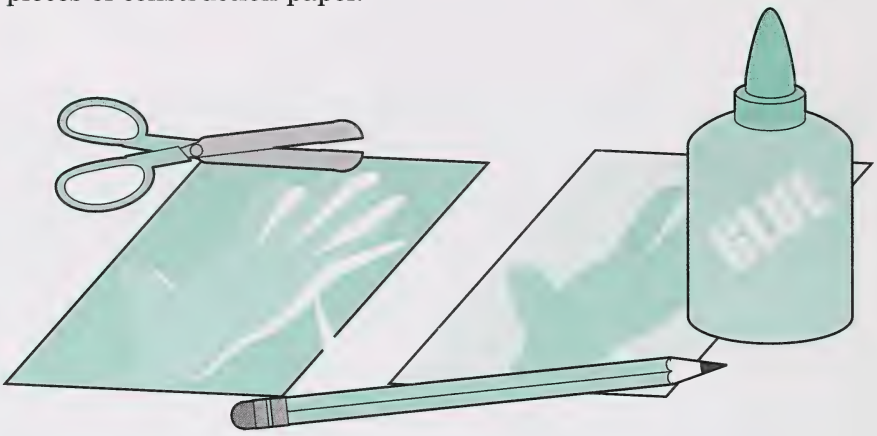
- There is one-to-one correspondence between numbers and objects in the set being counted.
- A number name applies not only to the last object named, but also to the whole set of objects.
- Two objects are one more than one object, and so on.
- A set of eight apples is the same as a set of eight oranges, in terms of number.
- The number of objects does not change even if the arrangement of objects is different.

Group A

Group B

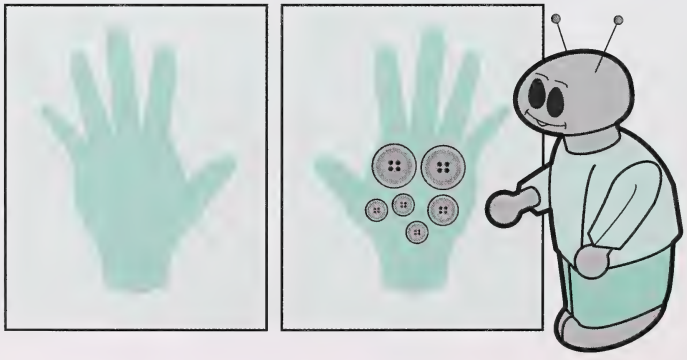
After the day's activities, comment on your observations in the Learning Log.

Trace around both of the student's hands on construction paper. Cut out the hand shapes, and glue them separately onto two other pieces of construction paper.



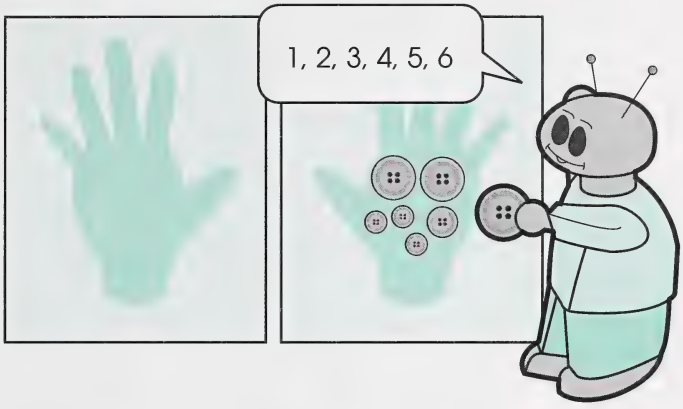
Provide the student with **seven** counters and the hand mats.

Ask the student to place **six** counters on the **right-hand** mat.



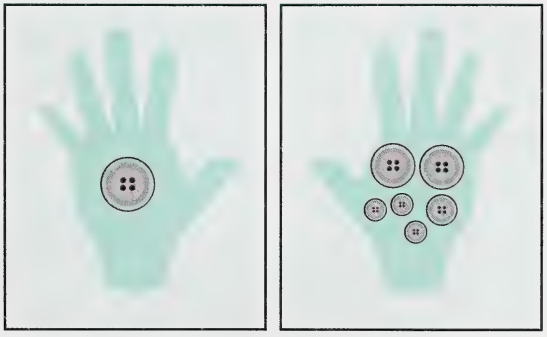
Then, say the following.

How do you know you have **six** counters on the mat? (If necessary, have the student count or recount the counters on the mat to confirm.)



How many counters are left to put on the other hand? (1)

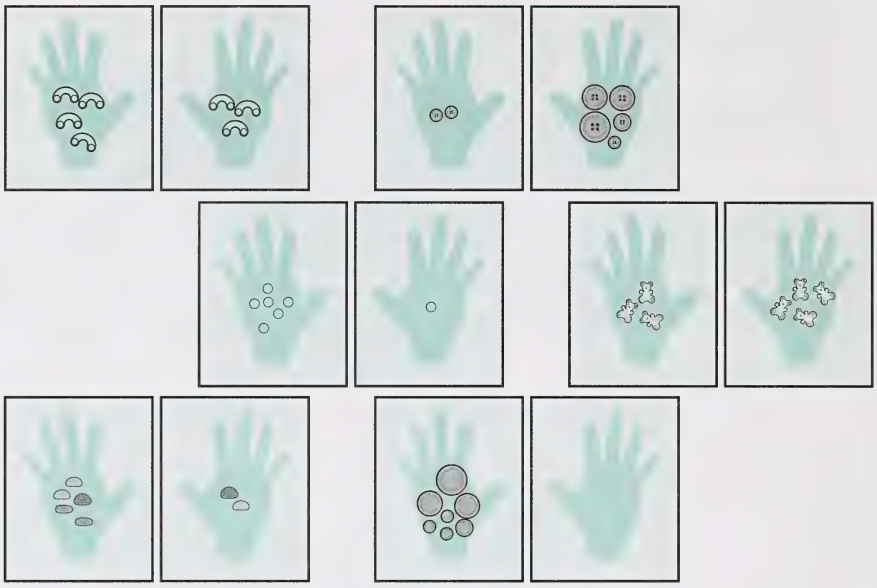
Place the **remaining** counter on the **left hand**.



How many counters do you have in total? (7)

The number **seven** is one **greater** than the number **six**.

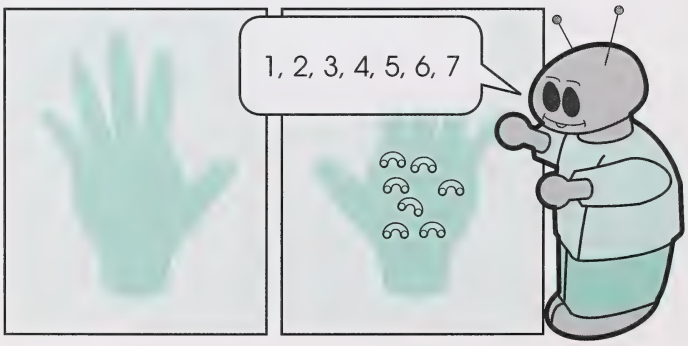
Now, see how many different ways you can show the number **seven** on the hand mats.
(Assist the child as necessary.)



Using eight counters, ask the student to place seven counters on the right-hand mat.

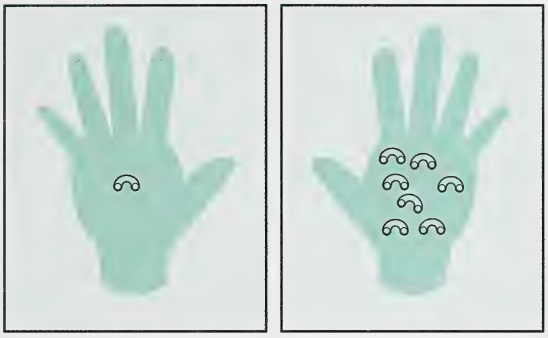
Continue with the following script.

How do you know you have **seven** counters on the mat? (If necessary, have the student count or recount the counters on the mats to confirm.)



How many counters are left to put on the other hand? (1)

Place the **remaining** counter on the **left hand**.

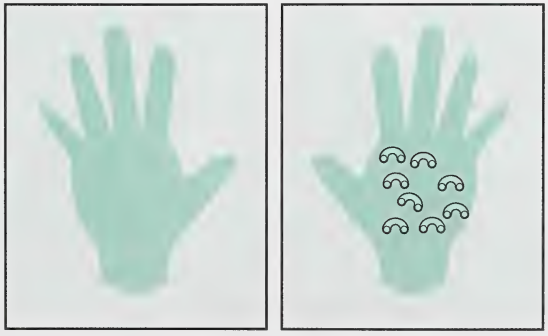


How many counters do you have on both hands? (8)

The number **eight** is one **greater** than the number **seven**.

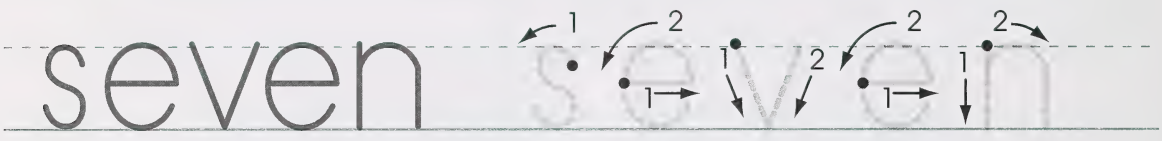
Now, see how many different ways you can show the number **eight** on the hand mats.

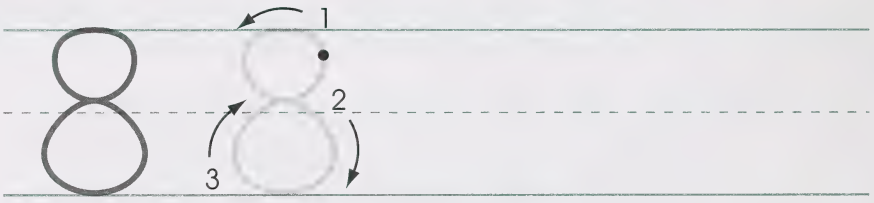
(Assist the child as necessary, for example, 8 + 0 and 0 + 8 is shown on the following hand mats.)

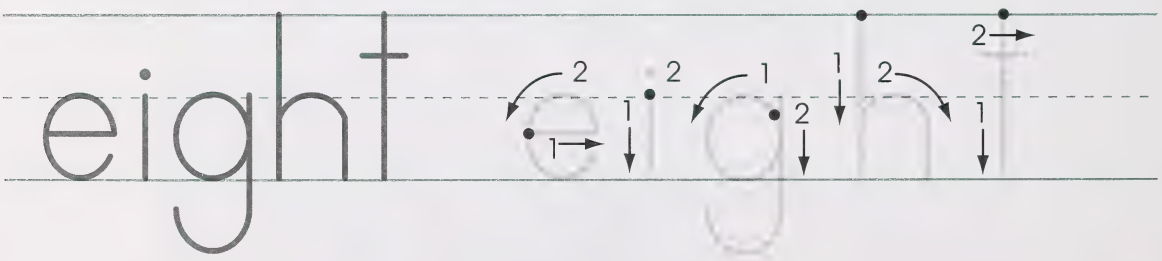


On paper or chalkboard, print the numbers **7** and **8** and the words **seven** and **eight**. While making these shapes and words, talk about their formations. Then, have the student print the numbers and the words.

Use the illustrations below to guide your instructions.







On blank recipe cards, have the student help you make the 7 and 8 number cards and the seven and eight word cards. Keep the cards for future activities.

Applying the Concept

One More, One Less, and Equivalent

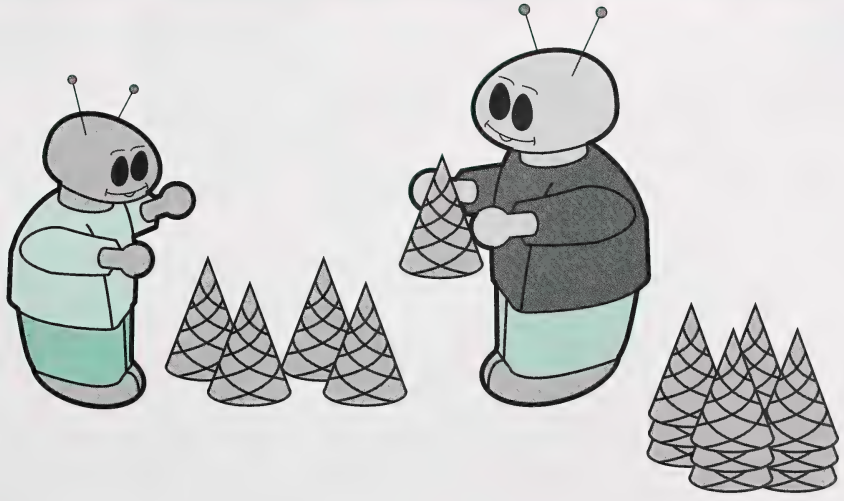
While the student is involved in this activity, observe whether the student does the following:

- makes predictions about the quantities
- matches the sets with **one-to-one correspondence**
- counts out the original set and then counts out a second set with one more, one less, or an **equivalent** amount

Ask the student to explain what he or she is doing.

Listen for clues to determine if the student can distinguish between one more, one less, many more, many less, and between a given set and a set that has one more or one less.

Comment about your observations in today's Learning Log.

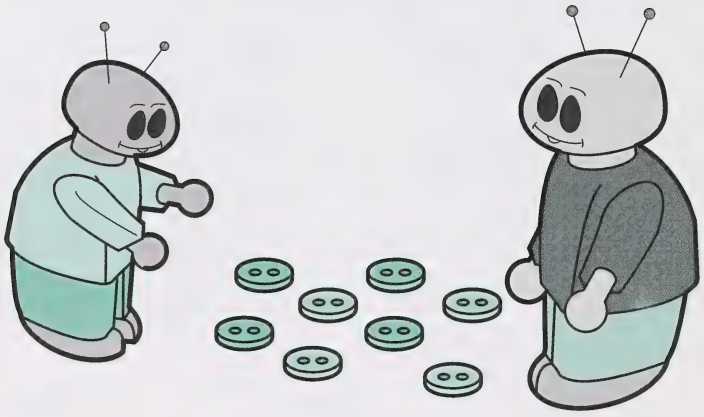


Instruct as follows.

> Make a set that has **one more** than mine.
>
> How many counters do you have now? (6)
>
> Now, make a set with **one less**.
>
> How many counters do you have now? (5)

Repeat a similar procedure with other numbers from one to eight.

In front of the student, place a set of eight counters.



Continue with the following script.

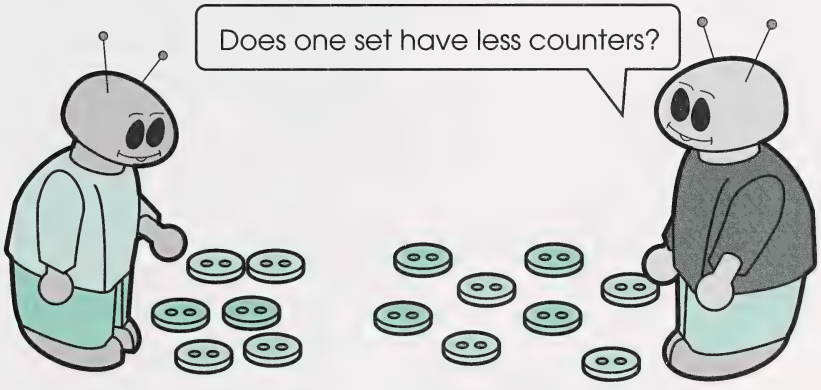
> Make a set that has the **same** number of counters as mine.
>
> How many counters are in each set? (8)
>
> Is each set the same in number? (Yes)

Change the arrangement of the counters in each set, moving the counters in one set closer together and spreading out the counters of the other set.

Look at the two sets of counters.

Do they have the same number of counters, or does one set have more? (the same)

Repeat a similar procedure using the word **less** instead of **more**.



Activities

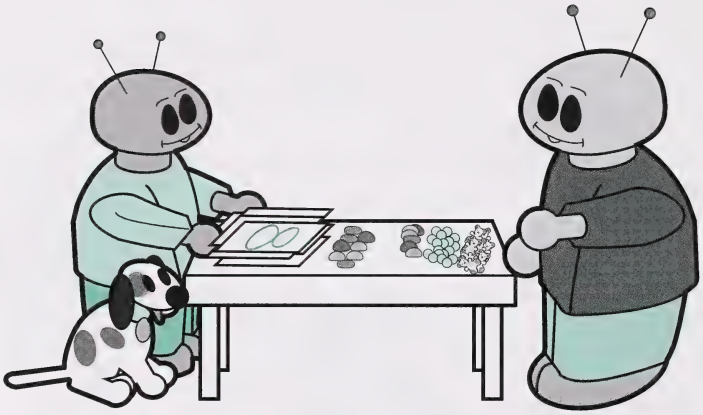
If the student can be mislead by the physical arrangement, or needs to count by **one-to-one correspondence** to be sure of **equivalence**, continue to provide opportunities for building, comparing, and changing the physical arrangement of sets.

Enrichment (optional)

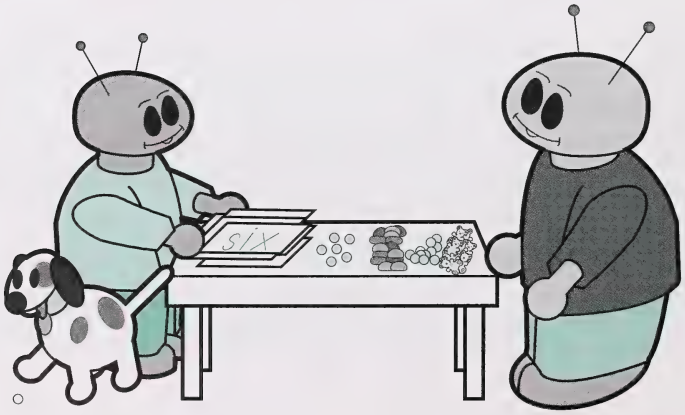
1. Building a Set

Step 1: Shuffle the 0 to 8 number cards, and then place them face down on a table.

Step 2: Take turns choosing a number card and making a set with a corresponding number of members. For example, if the card was the number 8, the student would make a set of eight members.

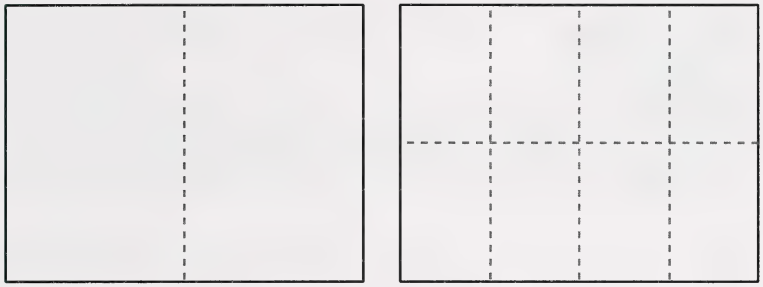


Step 3: When all the number cards have been represented, shuffle the number word cards, and place them face down. Repeat a procedure similar to the one used for the number cards.



2. Making Eight

Give the student a piece of unlined paper and eight counters. Ask the student if he or she knows how many times a paper must be folded in half to make eight equal parts.



Then have the child fold the paper to discover how many folds are needed. Give the student a fresh sheet of paper as needed.

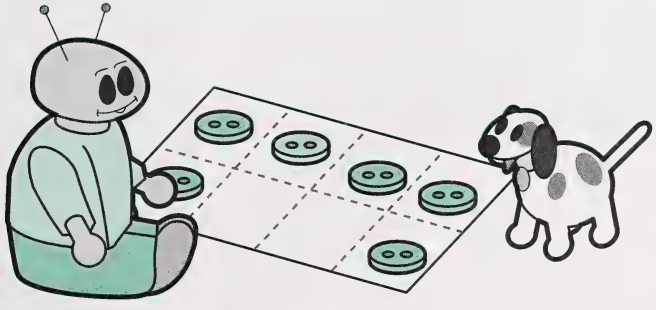
If the student asks for your help, start with a fresh piece of paper, and show how to first fold the paper in half.

Then, have the student count the number of parts that result.

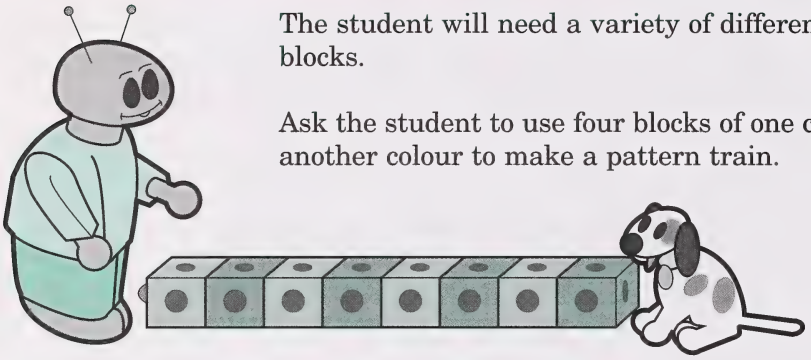
Repeat a similar process until there are eight parts.

Next, take turns placing counters in as many of the eight boxes as you choose and then reading the arrangement as follows:

- Two boxes are empty.
- Six boxes have counters.
- There are eight boxes in all.



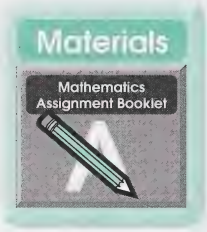
2. Patterns with Eight



The student will need a variety of different-coloured interlocking blocks.

Ask the student to use four blocks of one colour and four of another colour to make a pattern train.

Have the student describe the pattern. Assist the child as necessary.



Turn to Mathematics Assignment Booklet 3A, and follow the directions to do Day 7: Assignment 1.

Next, follow the directions to do Day 7: Assignment 2.

Then complete Day 7: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, was it easy or hard to identify sets of zero to eight members? Were some numbers harder to identify and construct than others?

Day 8

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- identifying and constructing sets of zero to ten members
- printing the numbers **9** and **10**
- printing the words **nine** and **ten**

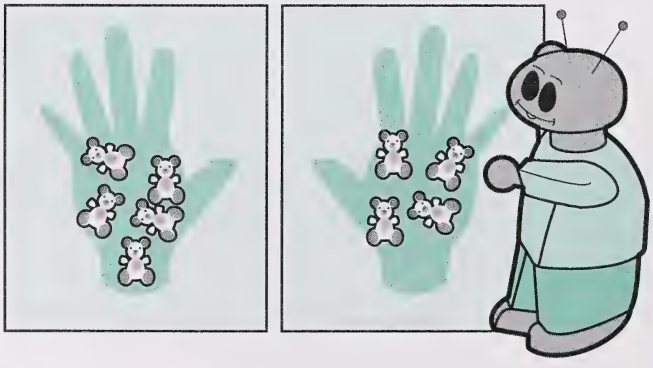
Vocabulary (spoken only)

nine
ten
round
count forward
amount
one-to-one correspondence

Materials Required

- box containing required materials from the master list
- collection of ten round counters, such as pennies, construction-paper circles, or bingo chips
- chalkboard and chalk (optional)
- 0 to 8 number cards and zero to eight word cards (During the day's activities, you will need to help the student make 9 and 10 number cards and nine and ten word cards.)
- clear plastic cup and foam cup (optional)
- hand mats (optional)
- library books (optional)

Keep all required materials for future activities.



Developing the Concept

Today, you will encourage the student to construct and identify sets to **ten**.

While the student is involved in the day's activities, continue to observe how the child determines quantity. Observe whether the student does the following:

- states the numbers from zero to ten in the correct order
- understands that there is a **one-to-one correspondence** between the numbers and objects in the set being counted
- understands that a number name applies not only to the last object named, but also to the whole set of objects
- understands that two objects are one more than one object, and so on
- understands that a set of nine apples is the same as a set of nine oranges, in terms of number

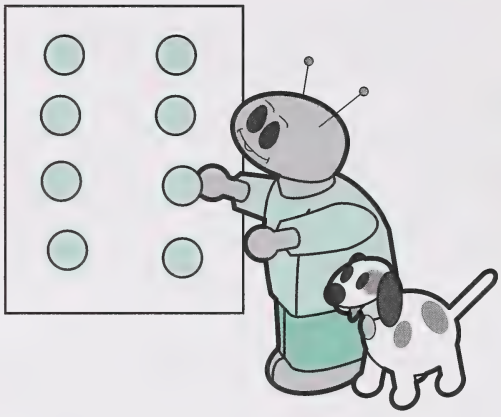
  Even though the type of objects are different, the number of objects in each set is the same.
- understands that the number of objects does not change even if the arrangement of objects is different

Example:

Group A Group B

Comment on your observations later in today's Learning Log.

On a piece of construction paper, ask the student to show a set of eight **round** counters.



Have the student add one more counter to the set.

Ask how many counters there are and have the student count to nine. Give help as needed.

If the student **counts forward** to nine from the starting set of eight to find the new **amount**, an important stage of mathematical development has been reached.

If your student starts at one again and counts to nine, she or he is still at the stage of **one-to-one correspondence**. The student needs practice

- counting sets to nine
- counting forward
- recognizing subsets within greater sets
- changing sets by one or two
- identifying models of the numbers zero to nine

Comment about your observations in today's Learning Log.

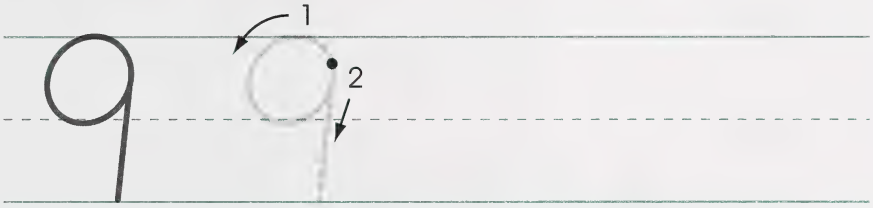
Take turns showing a given number of counters from zero to nine and challenging the student to count forward to nine.

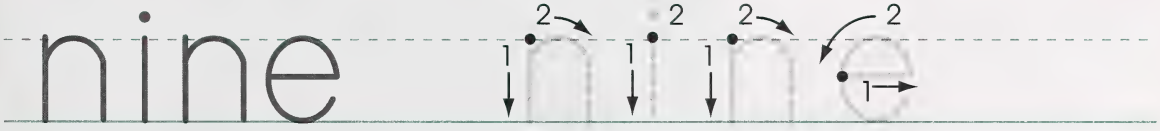
Next, have the student arrange the nine counters to make a design. Have the child read the arrangement for nine. Assist if necessary.

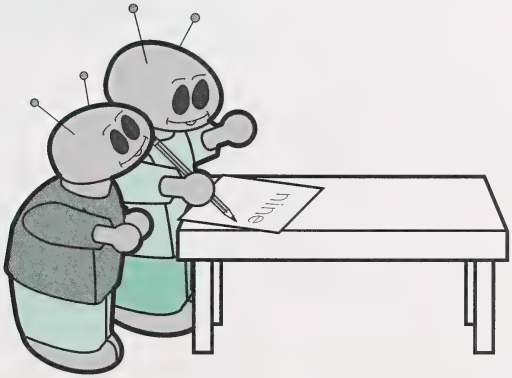
3 and 3 and 3 4 and 1 and 4 2 and 2 and 2 and 2 and 1

On paper or chalkboard, print the number **9** and the word **nine**. While making this number and word, talk about the formation. Then, have the student print the number and the word.

Use the illustration below to guide your instructions.

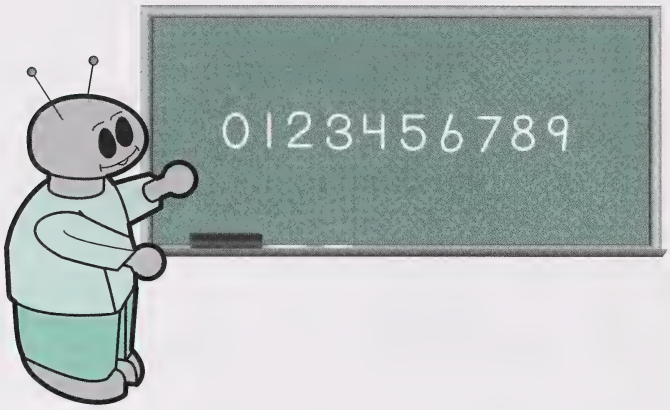






Applying the Concepts

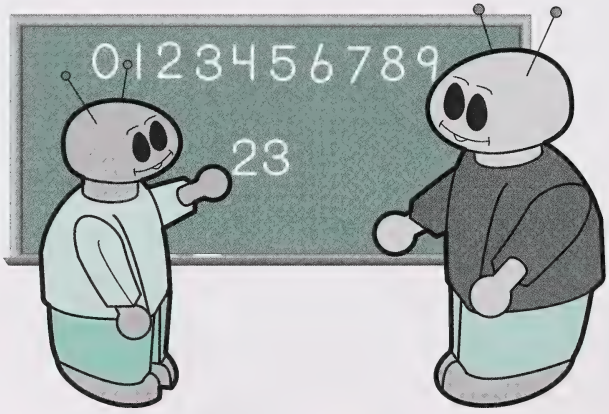
Print the numbers 0 to 9 on a piece of paper or a chalkboard.



Explain that today is a very special day since now the student knows how to print all the number shapes.

From this day forward, all numbers can be made from the ones already learned.

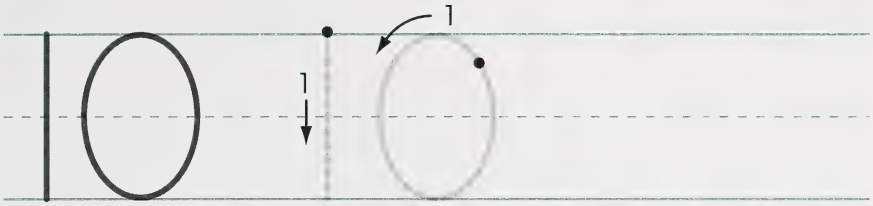
Challenge the student to suggest some numbers, and you will print them. For example, the student could suggest the number 23.



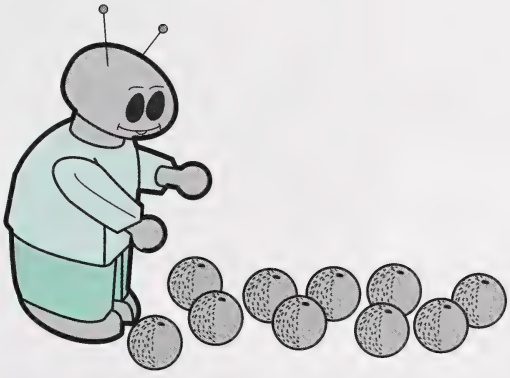
Talk about how all these numbers are made from the ones already studied.

If the student does not suggest the number 10, print this number on a piece of paper or a blackboard.

Use the illustrations below to review with the student how to make the number 1 and the number 0.

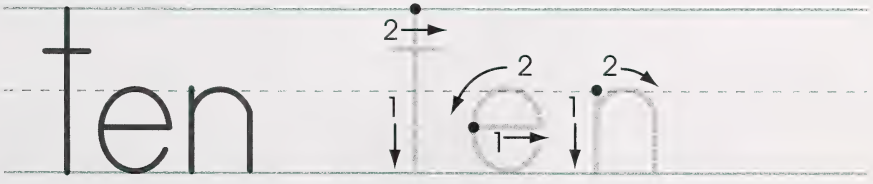


Then have the student count out ten counters from a collection. Assist the child as necessary.



Briefly spend some time practising the formation of this two-digit number in the air and on the floor with the student.

Next, show the student how to print the word **ten**.



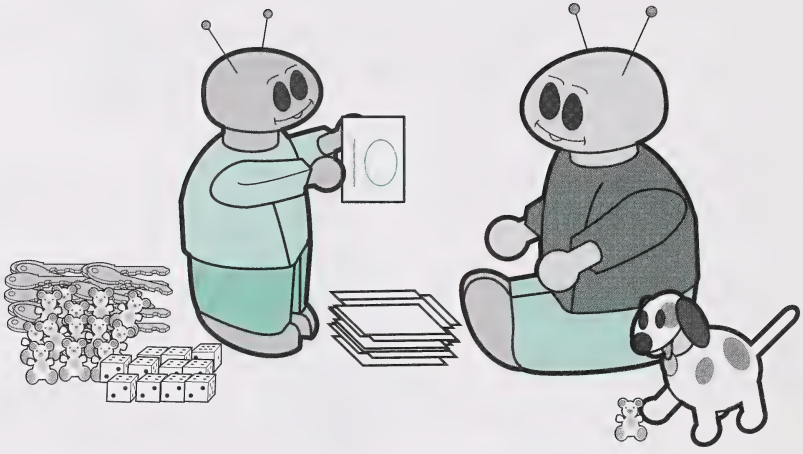
Encourage the student to practise the formation of this word a few times.

On blank recipe cards, help the student make cards for the numbers **9** and **10** and the words **nine** and **ten**.

Add these number cards to the zero to eight number and word cards.

Shuffle the number cards, and place them face down.

Take turns choosing a card and showing a matching number of counters.



Continue until the student has had the opportunity to identify and construct sets of zero to ten members.

Repeat a similar procedure with the zero to ten word cards.

Enrichment (optional)

1. Finger Sets

Play a finger game by calling out a number from zero to ten and having the student show that number with fingers.

First play the game with the child's fingers in full view.

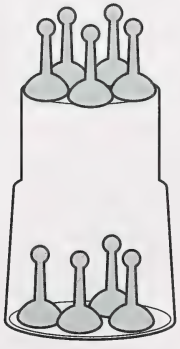
Then, ask the student to place hands to the back.

The student must feel the number of fingers required before bringing the fingers forward to check.

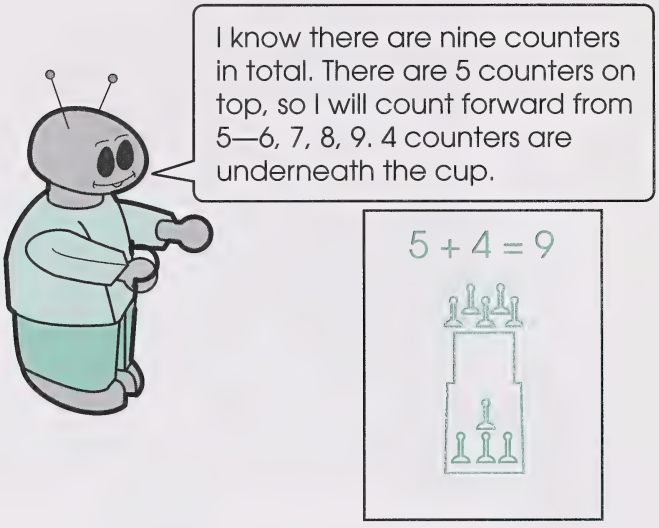
2. What Makes the Number Nine and Ten?

Step 1: Have the student count out nine small counters.

Step 2: Turn a clear plastic cup upside down, and place it over top of four counters. Place the remaining five counters on top of the cup.

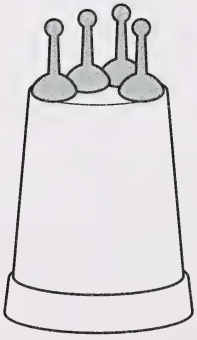


Step 3: Ask the student to count how many counters are on top of the cup, how many counters are underneath the cup, and how many counters there are in total. Encourage the student to count forward to nine from the top number. If necessary, help the student record the number sentence.



Step 4: Take turns placing different combinations of nine under the cup and on top of the cup until the student has recorded all possible combinations.

For an added challenge, you may want to use a cup that the student cannot see through.

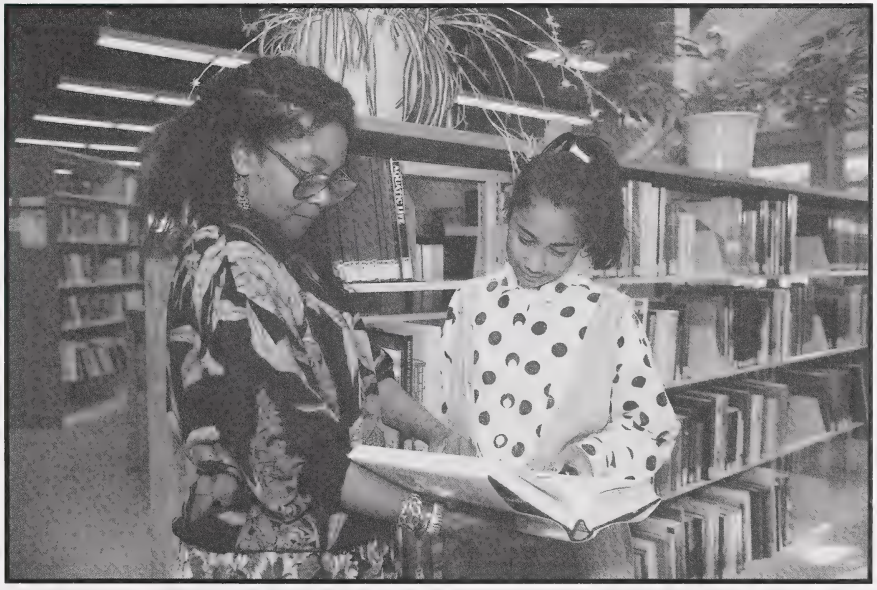


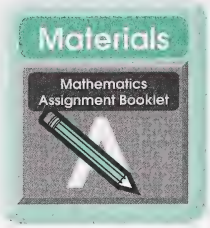
Step 5: Repeat this activity with ten counters.

3. Visit to the Library

Check to see if your local library has the following books. Reading books about numbers is another fun way to learn about them.

- *Mr. Gumpy's Outing* by John Burningham
- *There Were Ten in the Bed* by Pam Adams
- *Ten for Dinner* by Jo Bogart
- *The Tenth Good Thing About Barney* by Judith Viorst





Turn to Mathematics Assignment Booklet 3A, and follow the directions to do Day 8: Assignment 1.

Next, follow the directions to do Day 8: Assignment 2.

Then complete Day 8: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning.

Day 9

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: The activities in this day's lessons may take more than one day to complete.

- identifying and labelling the order of things to the tenth object

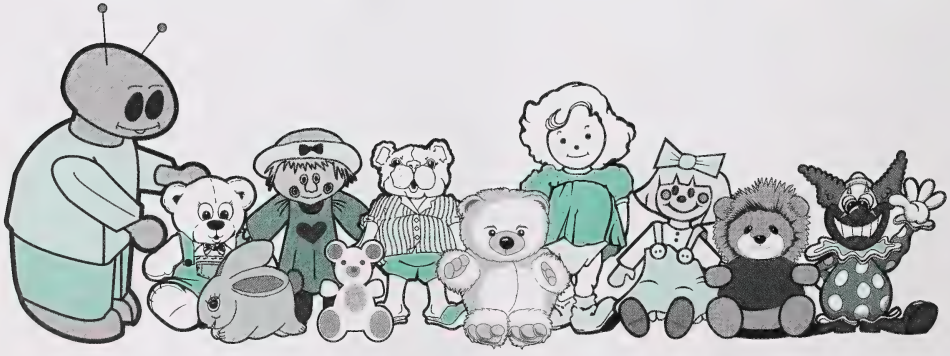
Vocabulary (spoken only)

order
ordinal numbers
tenth
first
second
third
fourth
fifth
sixth
seventh
eighth
ninth

Materials Required

- box containing required materials from the master list
- large piece of paper (optional)
- ten stuffed animals or other suitable substitutes
- nutritional lunch items, such as milk, bread, carrot sticks (optional)
- ten containers, such as plastic cups or disposable cups
- a penny (optional)
- *The Tenth Good Thing About Barney* by Judith Viorst (optional)

Keep all required materials for future activities.



Developing the Concept

In today's lesson, the student will be learning about **order** and **ordinal numbers** to the tenth position.

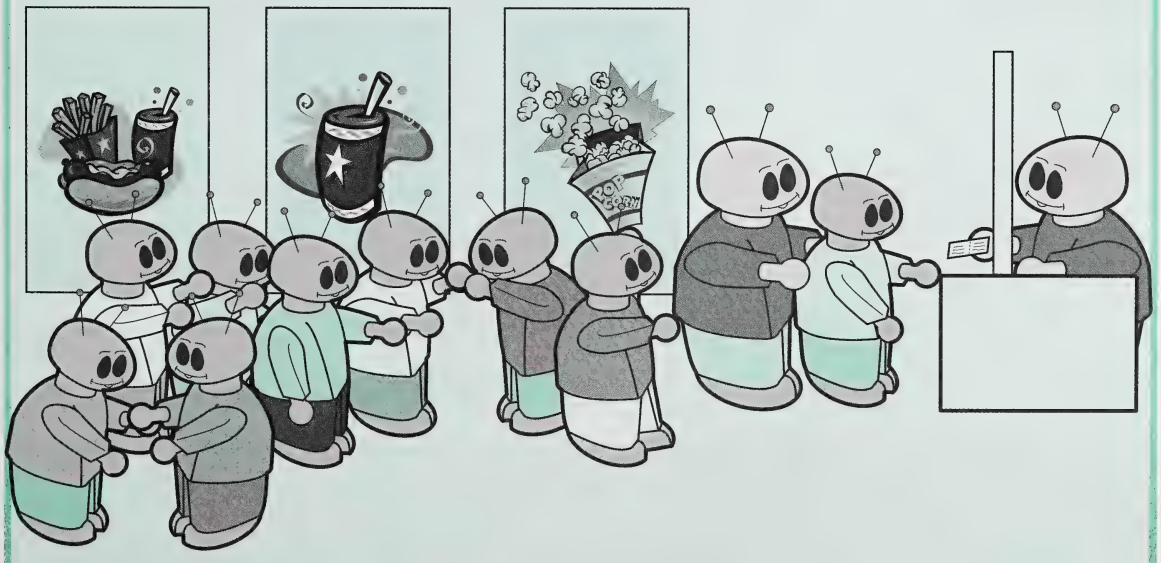
The Grade One Mathematics Program of Studies does **not** require the student to know the ordinal numbers. Use of these numbers, however, will aid you and the student in ordering activities, events, and things.

More than likely, the student has made statements like the following:

"Shannon finished **first**."
or
"Steven came in **third**."

At other times, the student might have heard expressions such as,

"This is the **fourth** time the telephone has rung tonight."
or
"On the **sixth** of November, we will go to the city."
or
"That man is **second** in line."



Continued . . .

Whenever you or the student use ordinal numbers or hear their usage, talk about what they mean in the context of the situation and why they were used.

Observe whether the student does the following during the day's activities:

- recognizes the word and number form, for example, **first** and **1st**, and the oral form of the ordinal numbers
- correctly uses ordinal numbers to describe the order of things in everyday situations

Comment on your observations in today's Learning Log.

Read the following verse with the student a few times. This verse is adapted from the traditional verse entitled "Five Little Bears."

Ten Little Penguins

Ten little penguins playing in the snow.
(Pretend to be playing in the snow.)

The **first** little penguin said, "Let's go tobogganing."
(Hold up left thumb.)

The **second** little penguin said, "Let's build a snow fort."
(Hold up left index finger.)

The **third** little penguin said, "Let's go get a snowcone."
(Hold up left middle finger.)

The **fourth** little penguin said, "Let's build a snowman."
(Hold up left ring finger.)

The **fifth** little penguin said, "Let's make angels in the snow."
(Hold up left little finger.)

The **sixth** little penguin said, "Let's run in the snow."
(Hold up right thumb.)

The **seventh** little penguin said, "Let's make a snow trail."
(Hold up right index finger.)

The **eighth** little penguin said, "Let's go skiing."
(Hold up right middle finger.)

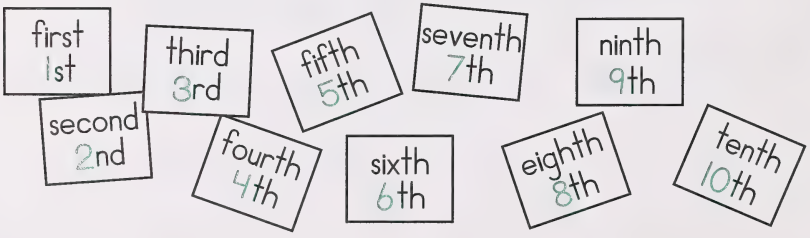
The ninth little penguin said, "Let's follow those tracks in the snow."
(Hold up right ring finger.)

The tenth little penguin said, "Let it snow, let it snow, let it snow."
(Hold up right little finger.)

You may want to copy this verse onto a larger piece of paper. Post it in a convenient spot and say it together.

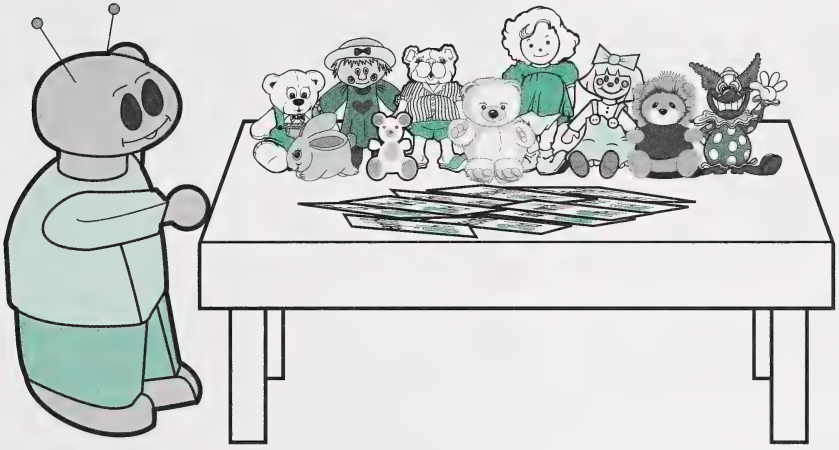
Applying the Concept

On blank recipe cards, help the student make ordinal-number cards similar to the ones shown below.



When finished, randomly scatter these cards on the table.

Next, ask the student to gather ten stuffed animals to put on the table.

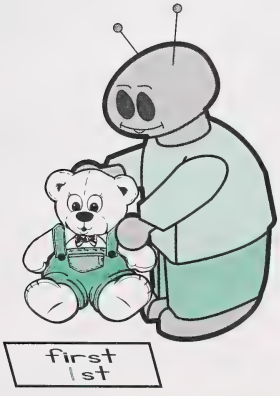


Ask the student to pretend that these stuffed animals need to line up so they can go do something special.

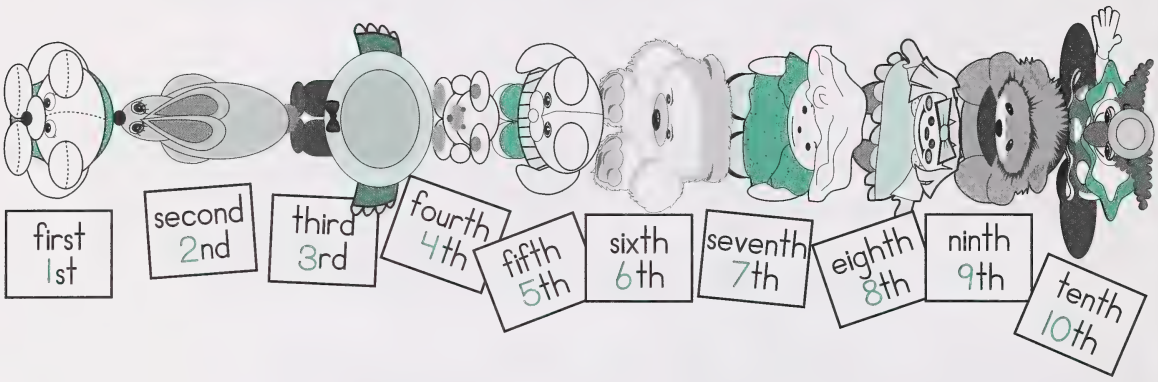
Discuss various ideas, and then have the student choose something to do or somewhere to go.

After a choice has been made, ask the student which animal is going to be first in the line.

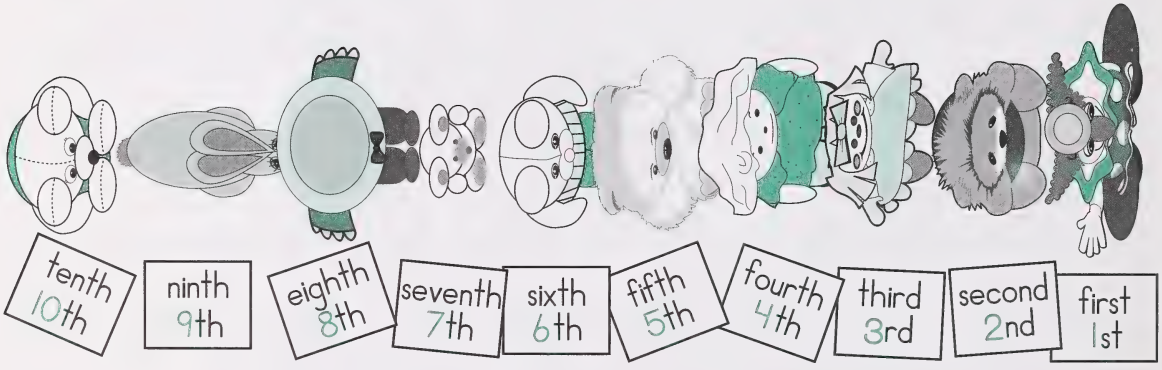
Have the student place this animal first, and guide the student to choose the first card to place in front of this animal.



Continue with a similar procedure until all the animals are lined up and the **order** of their positions is labelled.



Change the direction that the animals are facing, and challenge the student to label the position of each animal again.



Take turns mixing up the order of the stuffed animals and the ordinal-number cards and reassigning a new ordinal position to each one.

Continue this activity until the student has had the opportunity to practise identifying ordinal position and ordinal numbers and words to ten.

Take turns saying the name of a stuffed animal and asking the student to place it in a certain position.

Enrichment (optional)

1. Today's Menu

Ask the student to plan and make lunch for the two of you. The menu might include the following items:

- one glass of milk
- two slices of bread
- three carrot sticks
- four slices of cheese
- five almonds
- six cucumber slices
- seven pieces of cantaloupe
- eight pieces of orange
- nine raisins

Substitute as you wish.

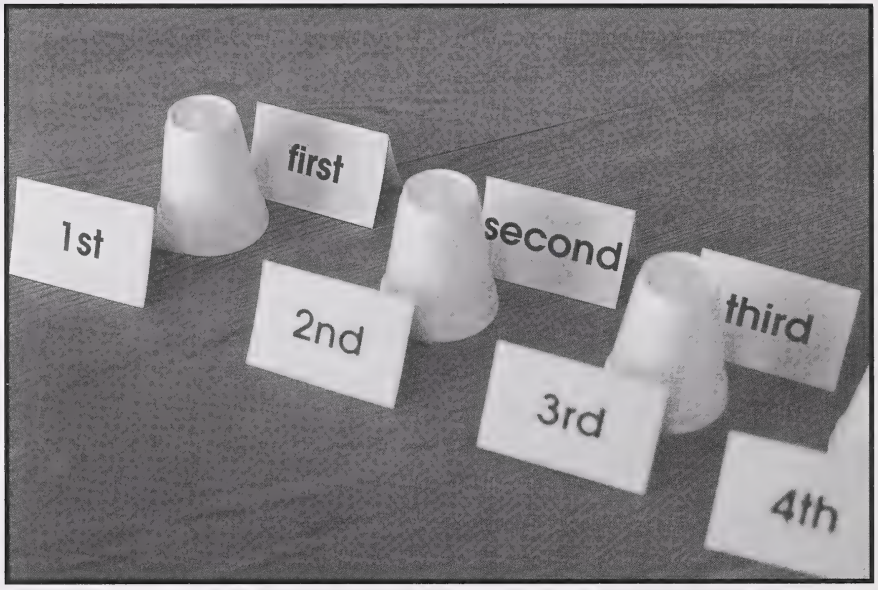
When the lunch is ready to eat, encourage the student to use this lunch opportunity to practise the ordinal numbers. For example, the following could be said:

"First, I will take a drink of milk."

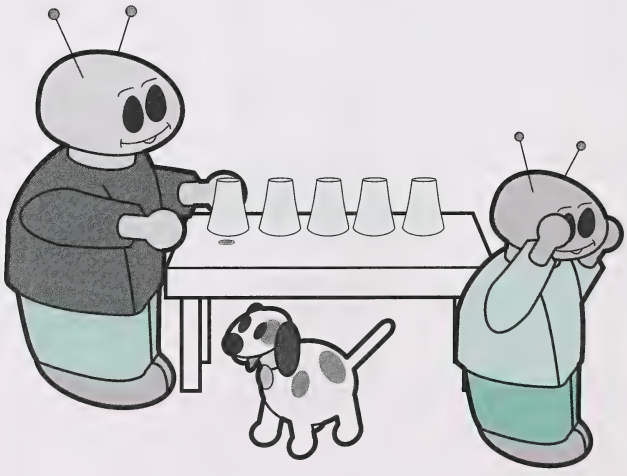
"Second, I will eat one slice of bread."

2. Hide and Seek

Step 1: Ask the student to place the containers in a row. Beside each container, place the appropriate ordinal name and number cards.

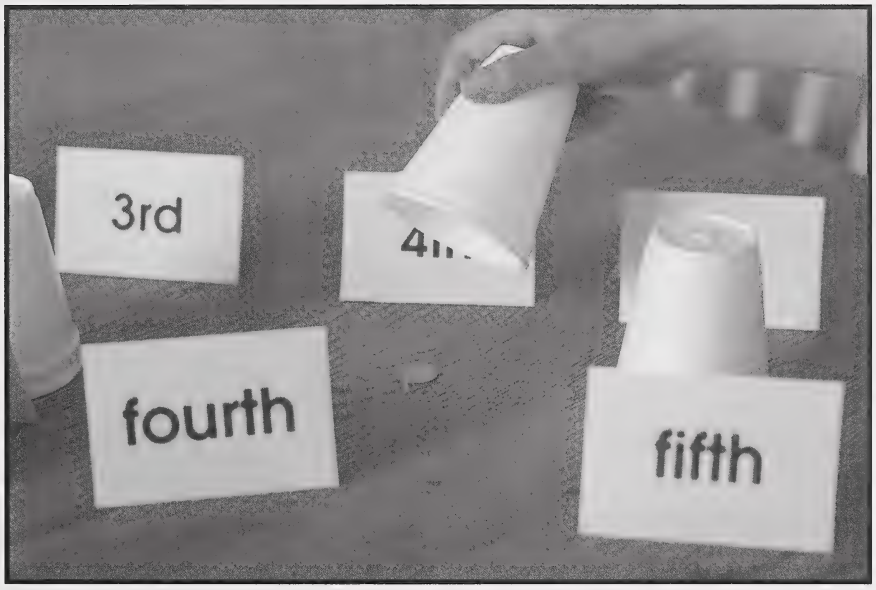


Step 2: Have the student close his or her eyes while you place a penny underneath one of the containers.



Step 3: Ask the student to guess under which container the penny is hiding. The child is to respond by describing the ordinal position. After each guess, lift up the container to verify whether or not the penny is there.

Ask the student to continue guessing until the penny is found.



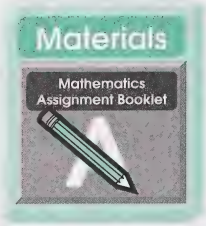
Step 4: Take turns guessing the ordinal position of the penny.

3. A Good Book to Read

In Day 8: Enrichment, the book *The Tenth Good Thing About Barney* was suggested. If you were able to obtain this book but haven't read it yet, read it at your earliest convenience.

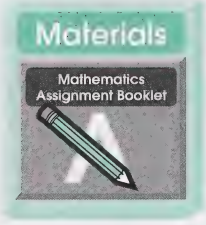
After reading the book, consider helping the student make a booklet about Ten Fantastic Things About

_____Student_____ _____Name_____.



Turn to Mathematics Assignment Booklet 3A, and follow the directions to do the assignment for Day 9.

Then complete Day 9: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, what does the student think about his or her ability to match the numbers 1 to 10 to the correct number of objects?



At the end of Mathematics Assignment Booklet 3A, follow the directions to complete Day 9, Student Folder Items. Take the required items from your Student Folder. Submit these items to your student's teacher for marking at the time the teacher has requested them.

Day 10

Calendar Time

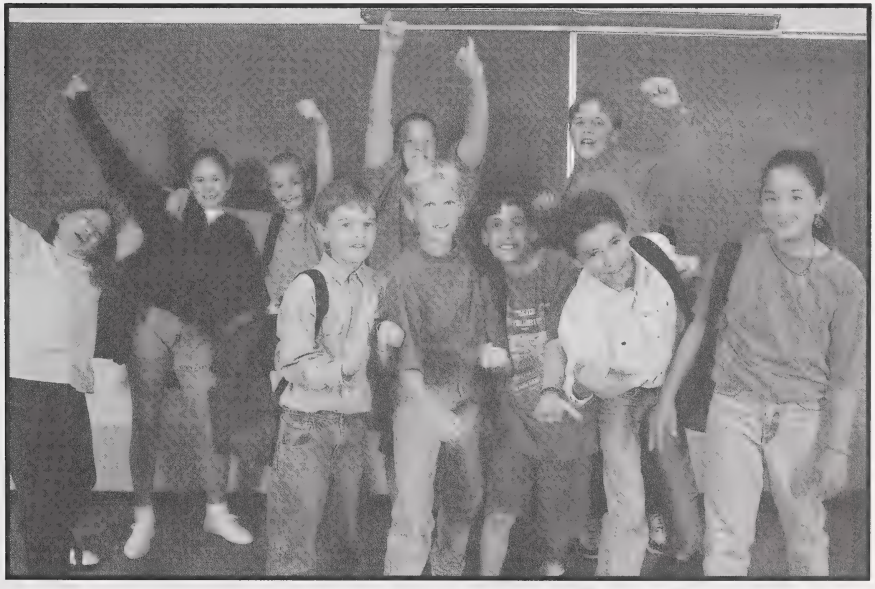
Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- identifying sets with zero to ten members
- matching the numbers 0 to 10 to the correct number words and number of objects
- printing the numbers from **0** to **10** and the words from **zero** to **ten**

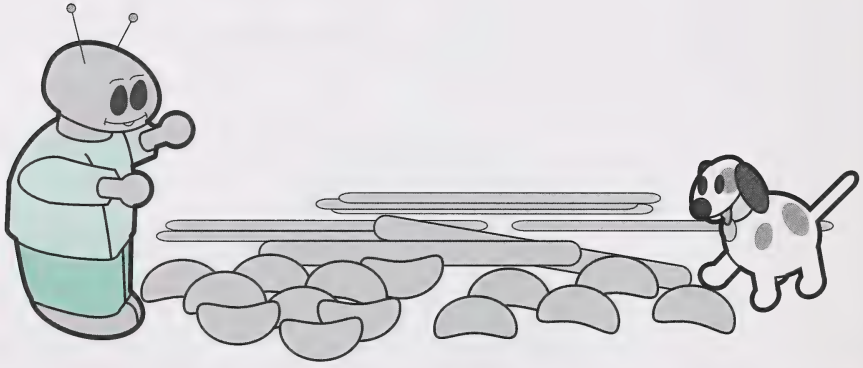


Vocabulary (spoken only)

ten
two-digit number
digit
palm
kinesthetic
fingerplays
rhymes

Materials Required

- box containing required materials from the master list
- a collection of 100 lima beans, pennies, or other suitable substitutes
- approximately 20 wooden craft sticks



On Days 6 to 9 of this module, the student was introduced to the numbers six to ten. As noted in the Day 8 Teaching Tip, the activities in this module are intended to develop an understanding of a number by focusing on the relationship of a new number to a familiar number. Through discussion and manipulation of objects, the student learns to arrange and rearrange visual patterns of each number being studied.

Today, you will continue to develop the student's awareness of the number **10** and the word **ten**.

Developing the Concept

Place a chalkboard or an unlined piece of paper in front of the student. Make a large number 10 on it, and then instruct the child as follows:

Do you know what number this is? (Tell the child the number if necessary.)

This number is 1 more than the number 9.

It is the number 10.

This number is special because it is made from two numbers; it is a **two-digit number**.

The word **digit** refers to any of the numbers from 0 to 9.

In the number **10**, the first digit is the number **1**, and the second digit is the number **0**.

Watch while I make the number 10 on the **palm** of my hand.

Now, I would like you to make the number 10 on the **palm** of your hand.

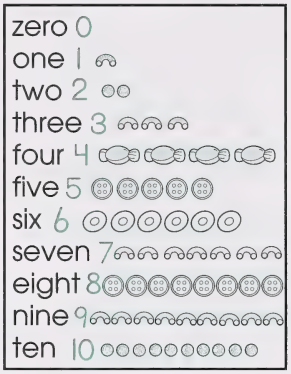
Remember to make the number 1 first and then the number 0.

Count from zero to ten a few times with the student.

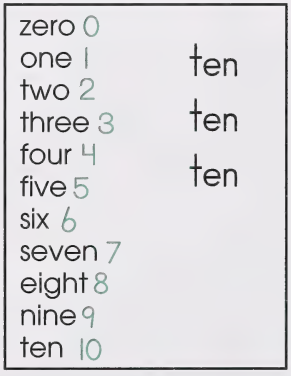
Print the words **one** to **ten** on a lined piece of paper. Read the words together.

Randomly pick different words, and ask the student what the words say.

After the student correctly identifies a word, have him or her print the matching number beside the word. Then, have the student show the number with a matching number of counters. Assist the child as necessary.



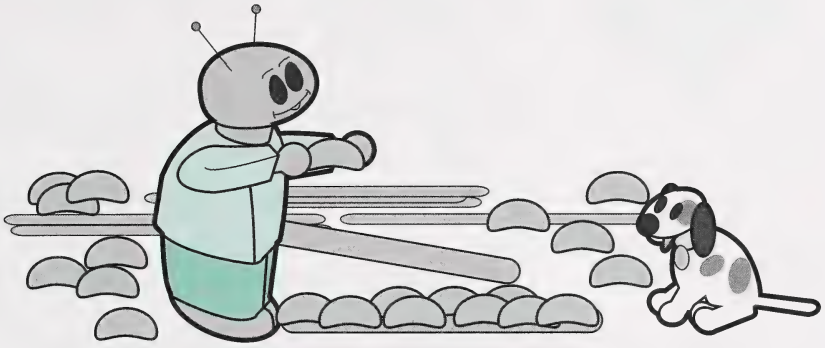
Once each word has been identified and matched with the correct number and objects, remove the counters from beside each word and have the student print the word **ten** three times on the paper.



If the student has difficulty forming numbers, the use of a chalkboard and chalk enables the child to obtain a greater feel (**kinesthetic** way of learning) for how the number is formed. If these items are not available, having the student form the numbers or words with a wax crayon on lined or unlined paper also works well.

Applying the Concept

Have the student glue ten items, such as lima beans, pennies, or other items, onto ten sticks. Put a line of glue over the objects, as well as underneath, to make the set more durable.



After each stick of ten has been completed and the glue has dried, have the student count the ten objects.

Keep the sets of ten for future activities.

Enrichment (optional)

1. Ordinal Number Poem

Fingerplays and **rhymes** delight most children. Many of the rhymes that children typically enjoy involve mathematical ideas and language. Reciting and discussing rhymes during mathematics helps the student

- associate an enjoyable experience with mathematics
- use manipulative objects to represent mathematical vocabulary embedded in the rhyme

Ask the student to make finger puppets to act as the characters in the following poem, or you and the child could create your own poem to help the student identify sets of ten. For example, you and the student could create a poem about ten penguins.

Ten Little Snowmen

The first little snowman ran out to play.

The second little snowman got out his sleigh.

The third little snowman went for a walk.

The fourth little snowman stopped to talk.

The fifth little snowman went to see a friend.

The sixth little snowman zoomed around the bend.

The seventh little snowman cried boo-hoo.

The eighth little snowman got the flu.

The ninth little snowman ate a crunchy carrot.

The tenth little snowman went to feed his parrot.

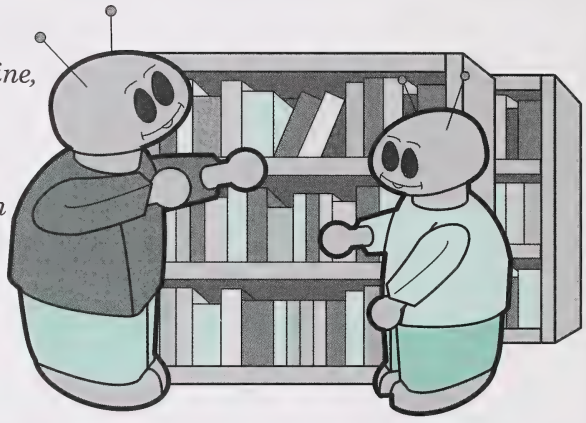
2. Visit to the Library

Reading counting books with the student may be another way to develop the child's understanding of numbers. If you do not find these books at the library, check with your librarian for other counting books that you and the student can read. You may also want the librarian to show you the library's collection of books on fingerplays.

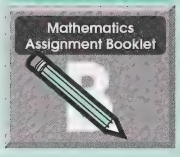
Bang, Molly. *Ten, Nine, Eight.*

Ernst, Lisa Campbell. *Up to Ten and Down Again.*

Miller, Jane. *Farm Counting Book.*

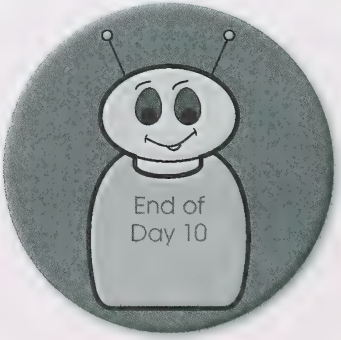


Materials



Turn to Mathematics Assignment Booklet 3B, and follow the directions to do the assignment for Day 10.

Then complete Day 10: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, what does the child think about his or her ability to identify sets of zero to ten members?



Day 11

Calendar Time

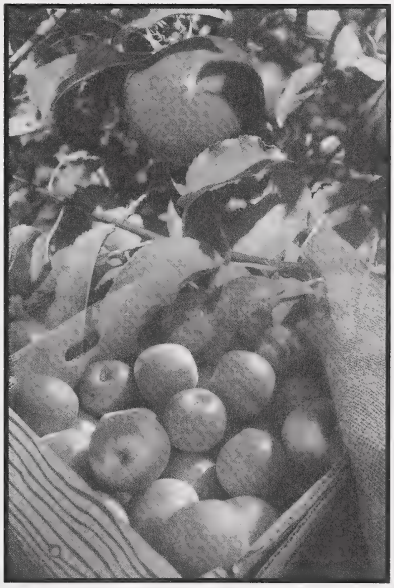
Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- identifying sets with more or less members

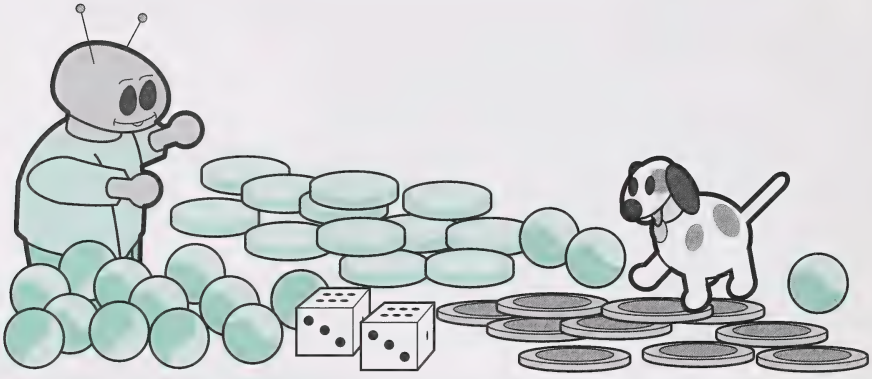


Vocabulary (spoken only)

more	lower
fewer	most
less	least
higher	

Materials Required

- box containing required materials from the master list
- a pair of dice
- 20 counters (10 one colour and 10 another colour)
- deck of playing cards (optional)
- 11 clear self-closing plastic bags (optional)
- 55 marbles or another suitable substitute (optional)



Today, you will continue to have the student identify sets of five to ten members. You will also be helping the student compare set sizes (for example, recognize which sets have **more** members and which sets have **fewer** or **less** members).

While the student is involved in recognizing sets with more or less members, observe whether or not the child

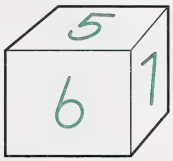
- lines up the objects for one-to-one correspondence
- counts the numbers in each group
- uses the terms **more** and **fewer** and **less** appropriately
- realizes that each situation that involves a **more** also involves a **fewer** or a **less**

Comment on your observations later in Day 11: Learning Log.

Developing the Concept

Place masking tape on the sides of each die.

On one die, print the numbers 5, 6, 7, 8, 9, and 10.

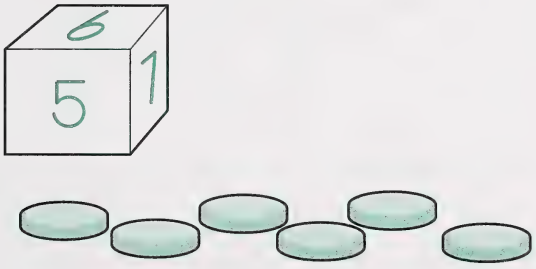


On the other die, print the word **more** on three random sides and the word **less** on the remaining three sides.

Give the student 20 counters, ten of one colour and ten of another colour.

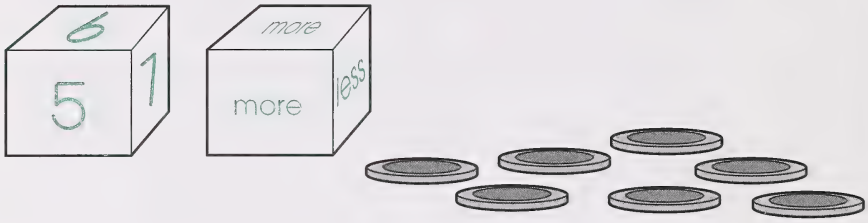
Have the student roll the numbers die.

If the student rolls a number **6**, for example, the student makes a set of six counters of the same colour.

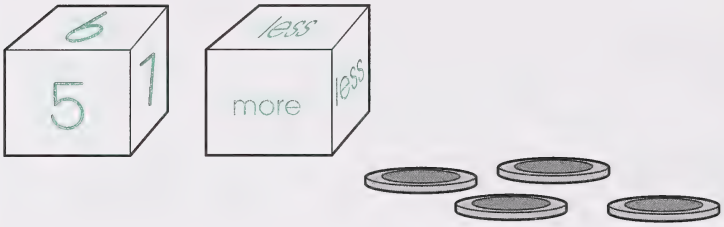


Next, have the student roll the word die.

If **more** is rolled, the student makes a set with more than six different-coloured counters.



If **less** is rolled, the student makes a set with less than six different-coloured counters.

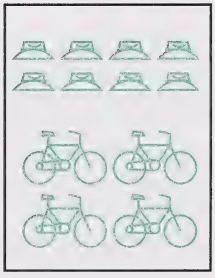


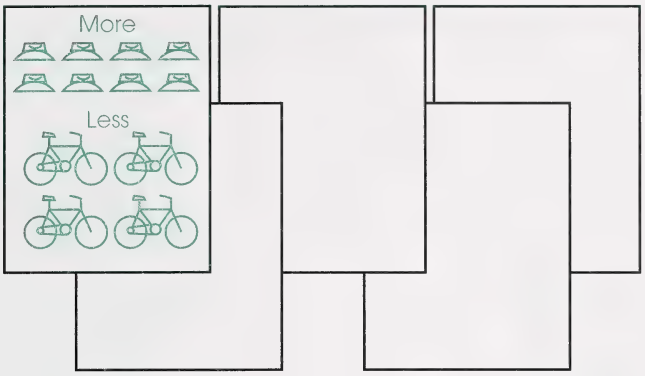
Take turns rolling the dice until the student has had the opportunity to practise making sets with more or less members.

Applying the Concept

More and Less Booklet

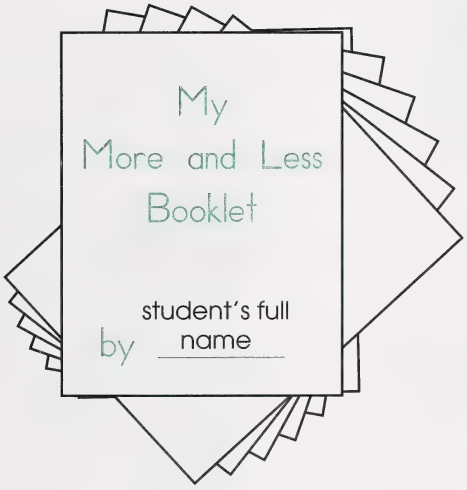
Step 1: On each of five sheets of unlined paper, ask the student to draw or glue on two pictures that show more and less sets of one to ten items. Help the child correctly label each grouping.





Pictures can be cut out from catalogues, flyers, and magazines.

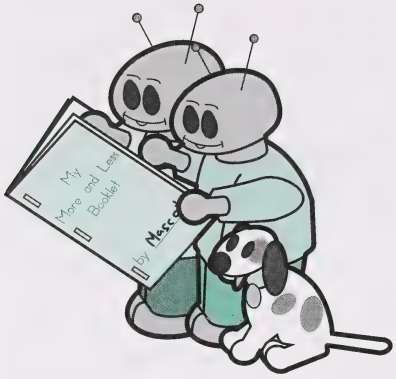
Step 2: Help the student make a front and back cover page for the booklet.

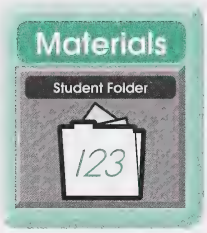


Step 3: Staple the cover page, the inside pages, and the back page together on the left side.

Step 4: On the back of the booklet, have the child print the abbreviated form of the module and day numbers, M3D11.

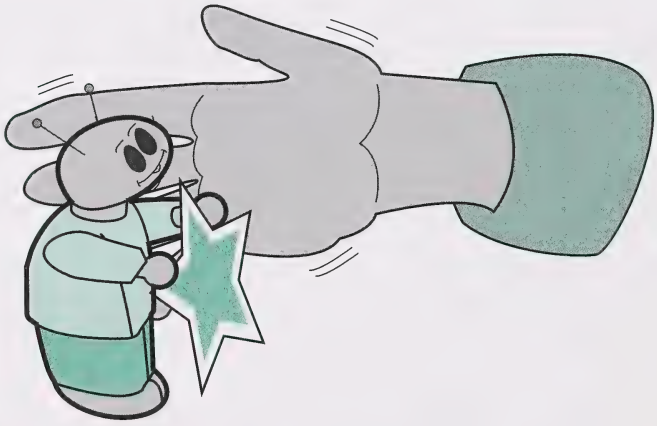
Step 5: Encourage the student to tell family and friends about the **more** and **less** groupings in the booklet.





Step 6: After the student has shared the booklet with others, place it in the Student Folder.

Consider giving the student a pat on the back, a stamp, or a sticker when the activity has been completed with care and effort.



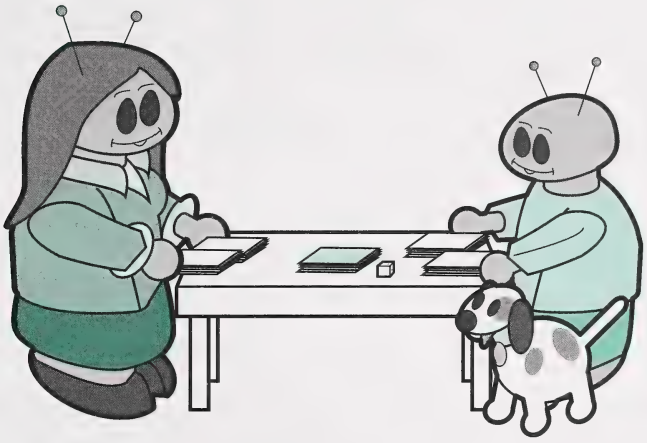
Enrichment (optional)

1. More and Less Cards

Step 1: From a deck of playing cards, take out the cards numbered 2 to 10. Give the student the red cards and yourself the black ones.

Step 2: Show the student how to **shuffle** his or her cards; then shuffle your cards.

Place the cards face down in front of you.

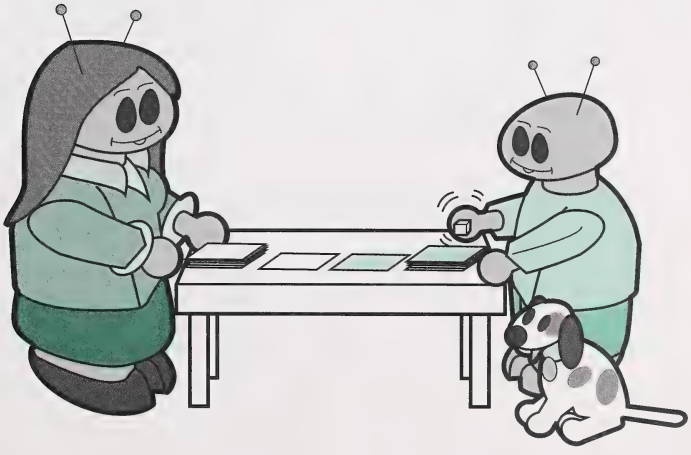


Step 3: Roll the word die, and then you and the student each flip a card face up.

If **more** is rolled, the player with the **higher** number card gets both cards.

If **less** is rolled, the player with the **lower** number card gets both cards.

If two cards with the same number are flipped, you and the student continue to flip cards until a winner is declared.



Alternate Activity

Take turns rolling the word die and the number die and stating or printing an appropriate number. For example, if **more** and **6** are rolled, the player would state or write the number 7 or a higher number; if **less** and **10** are rolled, then the number 9 or a lower number is used.

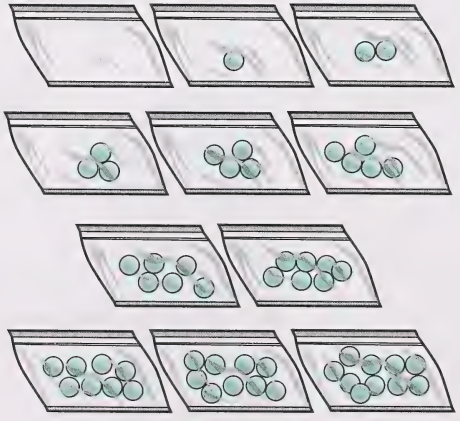
Step 4: Play the game until the student has had the opportunity to practise identifying the higher and lower number.

2. Marbles in Order

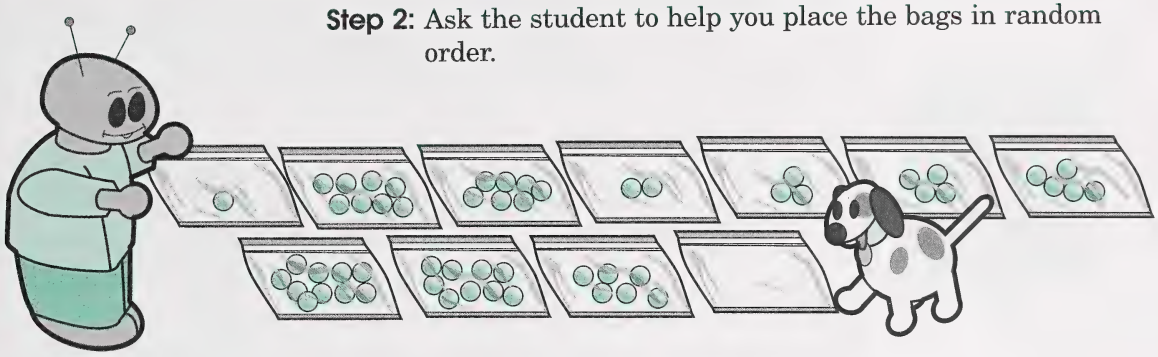
Step 1: Ask the student to put

- zero marbles in the first bag
- one marble in the second bag
- two marbles in the third bag
- three marbles in the fourth bag
- four marbles in the fifth bag
- five marbles in the sixth bag
- six marbles in the seventh bag
- seven marbles in the eighth bag
- eight marbles in the ninth bag
- nine marbles in the tenth bag
- ten marbles in the eleventh bag

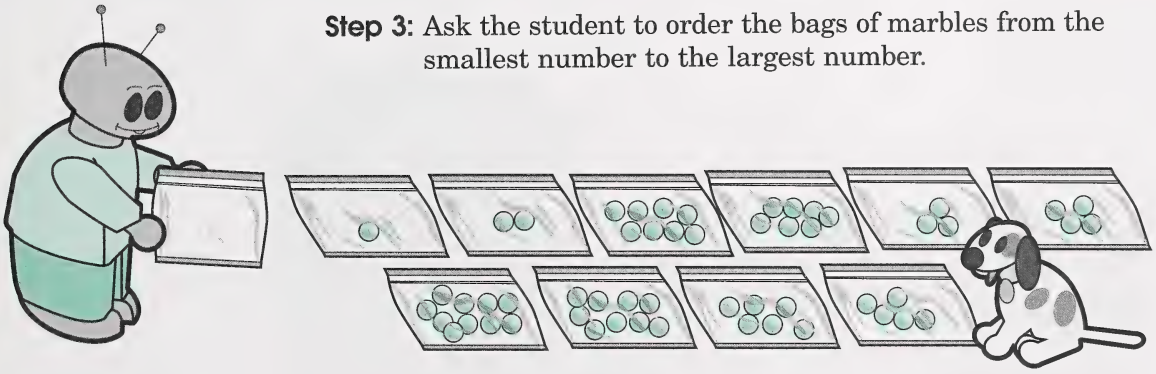
Close each bag once the correct number of marbles has been placed inside.



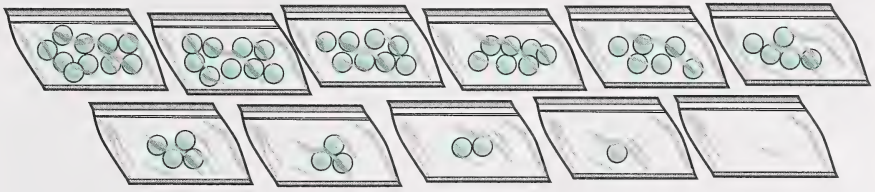
Step 2: Ask the student to help you place the bags in random order.



Step 3: Ask the student to order the bags of marbles from the smallest number to the largest number.

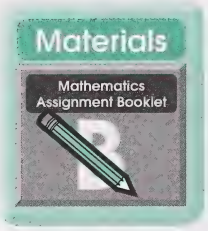


Have the student order the bags from the largest to the smallest.



Step 4: Take a few turns ordering the bags from smallest to largest and from largest to smallest.

Check each other's ordering sequence.



Turn to Mathematics Assignment Booklet 3B, and follow the directions to do Day 11: Assignment 1.

Next, follow the directions to do Day 11: Assignment 2.

Then complete Day 11: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, was it easy to identify sets with more and less members?

Day 12

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- identifying special features of a penny
- matching the correct number of pennies to a price tag

Vocabulary (spoken only)

money
price(s)
coins
change
purchase
penny/pennies
Canadian
queen
head
maple leaf
tail
value
minted
country
rubbing
frame
border
cent symbol
cent(s)

Materials Required

- box containing required materials from the master list
- a collection of approximately 100 pennies
- old catalogues and flyers (optional)
- 20 counters (10 one colour and 10 another colour)
- deck of playing cards (optional)
- 11 clear plastic bags (optional)
- 55 marbles or another suitable substitute (optional)

Today, the student will be introduced to **money**: counting it, adding and subtracting it, and using it to buy objects.

It is important that the student begin to understand the use of money. Knowing how to handle money is an essential part of growing up and becoming more independent.

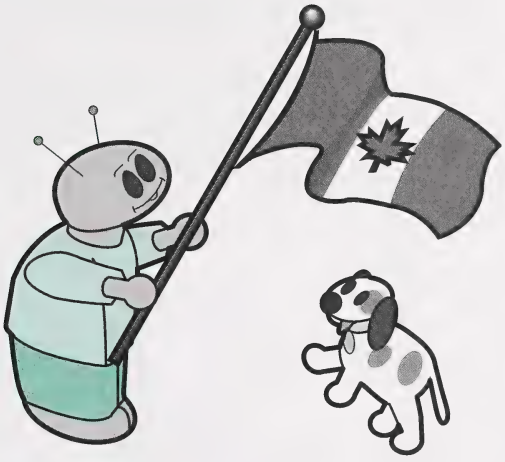
To enhance the student's understanding of money, when you visit a store, encourage the child to look at **prices** of items, to pay for personal items, and to learn the names of the different **coins**. If your child shows an interest, you could discuss why the **change** given after a **purchase** is correct or not.

Developing the Concept

Give the student a **penny** and discuss the features of the coin. For example, you could discuss the following:

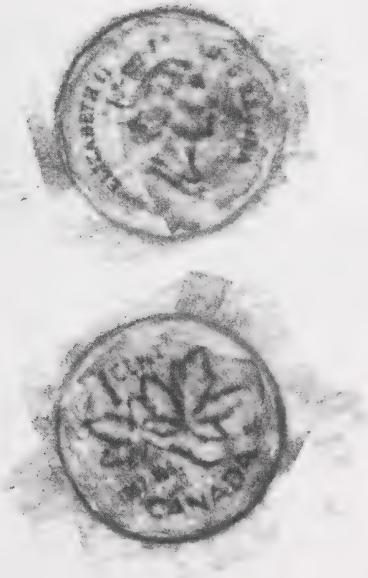
- On a **Canadian** penny, a picture of a maple leaf is on one side and a picture of the **queen** is on the other side. Sometimes, the queen side of the coin is called the **head**, and the **maple-leaf** side is called the **tail**.

- The **value** of the coin, the year it was **minted**, and the name of the **country** where it is used is shown on a coin.



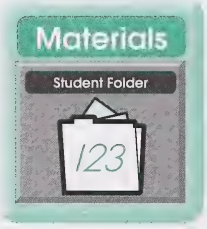
Have the student make five **rubbings** of the queen side of the penny and five rubbings of the maple-leaf side of the coin.

A rubbing is an impression of a surface made by placing paper on the surface and then rubbing it with a pencil, a crayon, or charcoal.

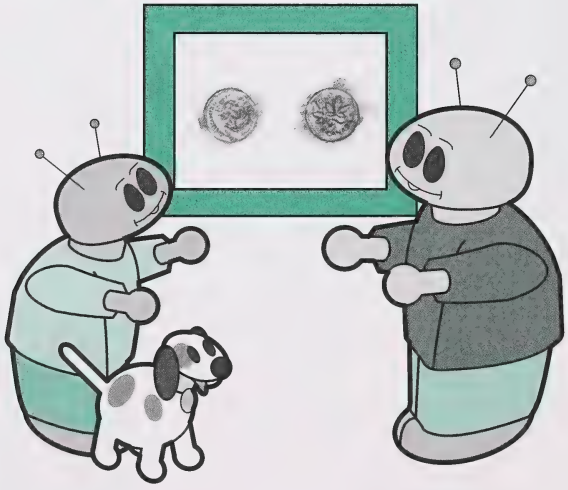


On a hard, flat surface, place a piece of unlined paper over one side of the penny. Then, with the pencil, go back and forth over the part of the paper where the penny is. The student's rubbings should look similar to the ones shown.

Help the student place a **frame** around the rubbings. Cut out the centre of a piece of construction paper, and glue the outside piece around the **border** of the rubbings as shown in the following illustration:



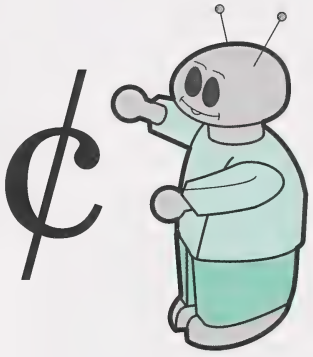
Display the child's rubbing picture at his or her eye level. This picture will be a required submission. Have the student print his or her full name and the abbreviated form of the module and day numbers, M3D12, on the back of the page. Place the picture in the Student Folder.



Applying the Concept

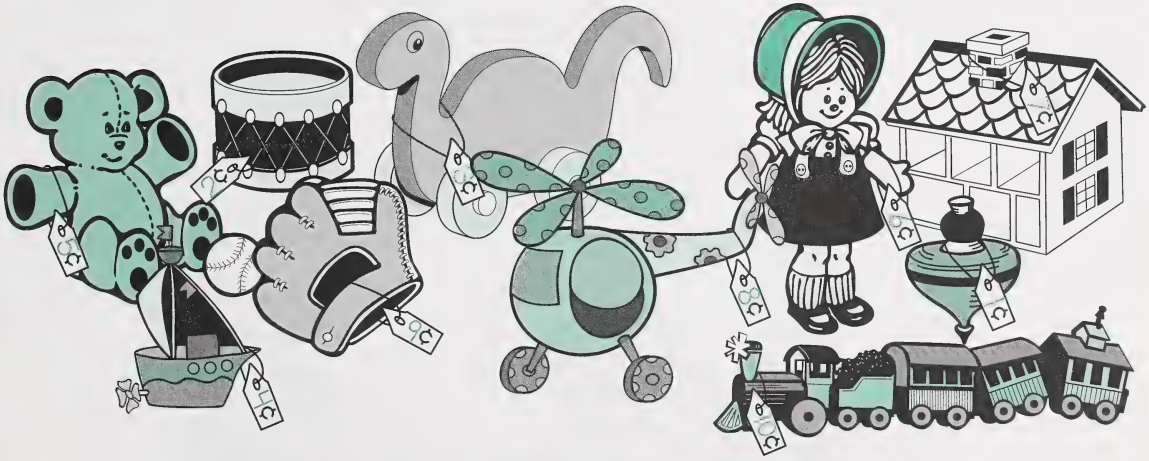
With the help of the student, display various items for sale. Price the objects from one to ten cents.

Focus the student's attention on the **cent symbol** after each item has been priced. Tell the child that this symbol is used for a coin called a **cent** or a penny.



With 20 pennies each, take turns purchasing the displayed items.

Continue until the child has had the opportunity to practise using pennies to purchase items.

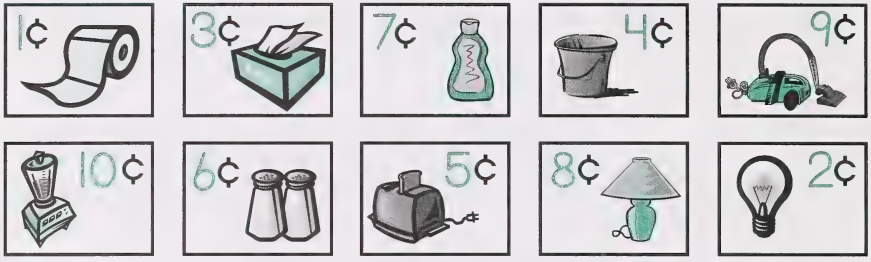


Enrichment (optional)

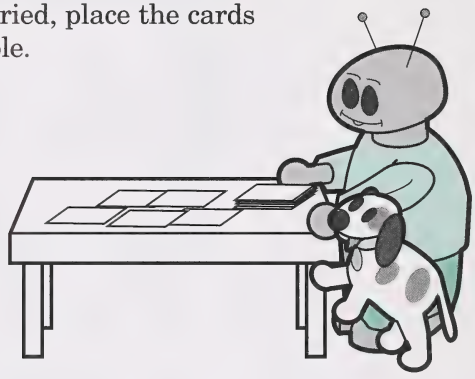
1. Catalogue Shopping

Step 1: Have the student cut out and glue catalogue pictures onto ten blank recipe cards.

Print a price from 1 cent to 10 cents beside each picture.

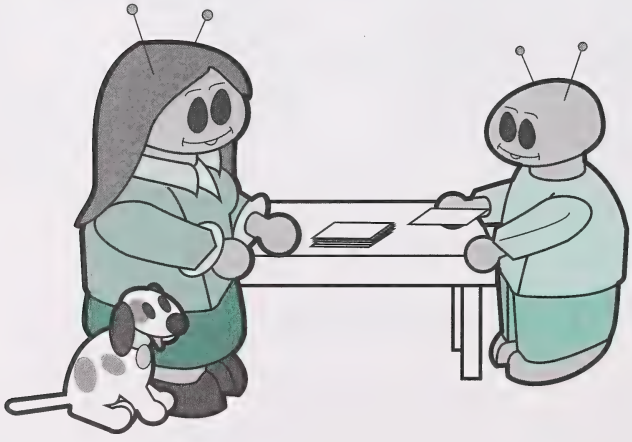


Step 2: When the glue has dried, place the cards face down on the table.



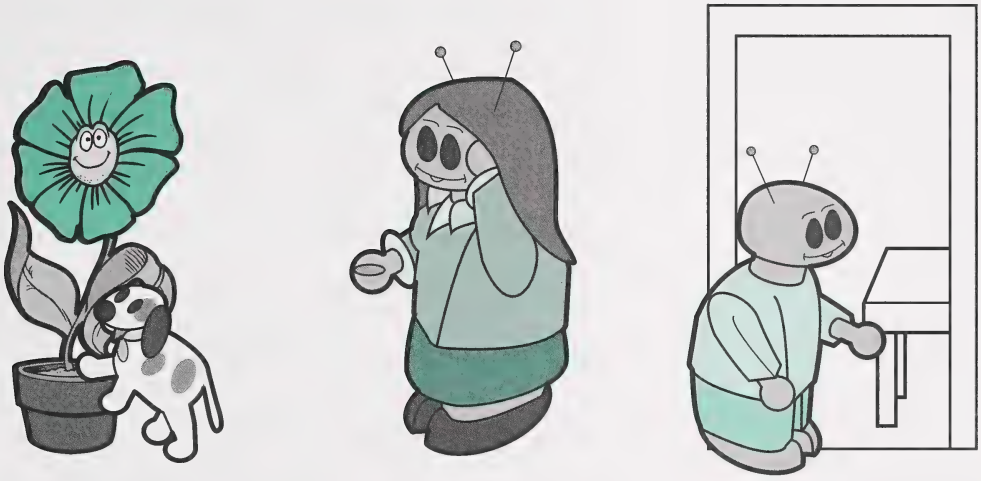
Step 3: Ask the student to help you give each game player 20 cents.

Step 4: Take turns choosing a card from the pile and using the pennies to count out the amount of the item. You could also take turns purchasing cards for the noted price.

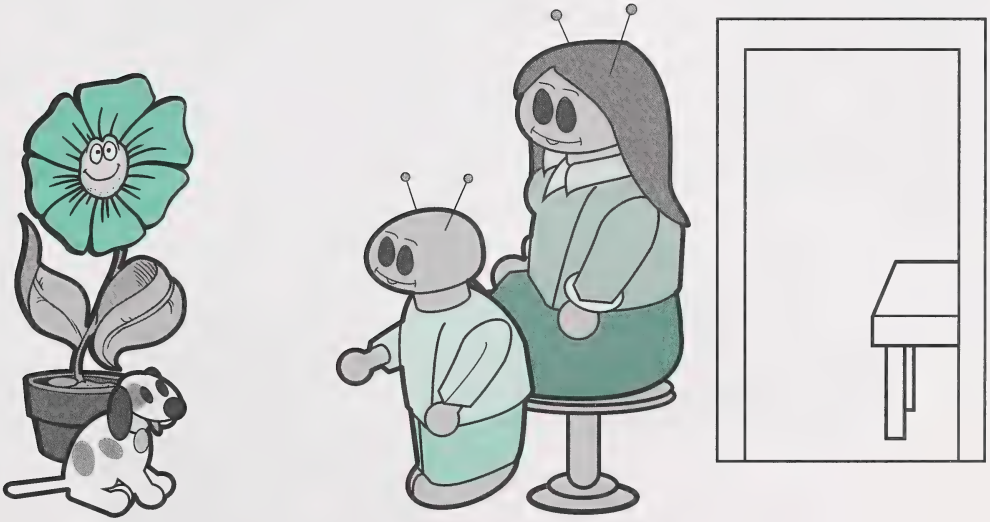


2. There Is a Penny in the Room Game

Step 1: One player is asked to leave the room, while another player hides a penny somewhere in the room.



Step 2: Once the penny has been hidden in the room, the player outside is asked to return to the room and to find the penny.



Step 3: When the student is looking for the penny, the players say the following verse.

There's a penny in the room, in the room, in the room.

Is it here? Is it there?

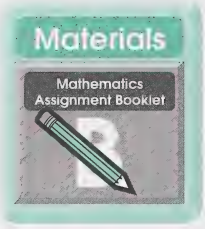
Where oh where can it be?

You may sing this verse to a tune of your choice.

If the student has not found the item after a reasonable amount of time (approximately two minutes), give the child hints, such as "You're hot" or "You're cold."

The term **hot** is used when the student is close to the penny.

The term **cold** is used when the student is far away from the penny.



Turn to Mathematics Assignment Booklet 3B, and follow the directions to do the assignment for Day 12.

Then complete Day 12: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, was it easy to match the sets of pennies to the cost of the items?

Day 13

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

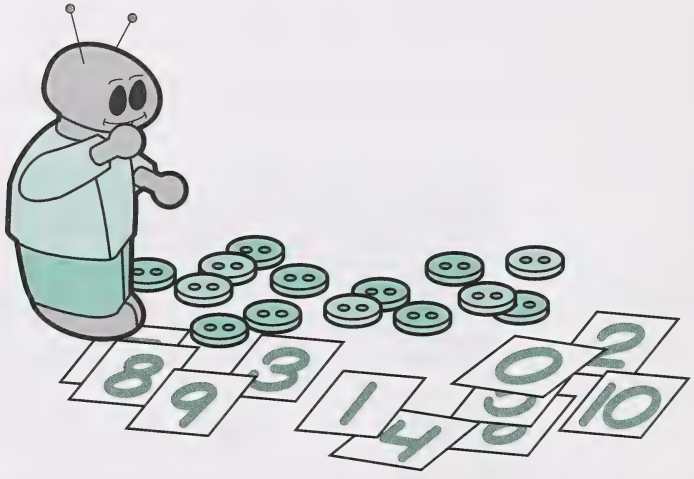
- counting to ten from a chosen number
- recording numbers before and after a given number and between two given numbers

Vocabulary (spoken only)

before
after
between

Materials Required

- box containing required materials from the master list
- 0 to 9 number cards (The student will need to make a number 10 card from a blank index card before starting the day's activities.)
- a die with the numbers 1 to 6 on it
- 11 plastic cups (optional)
- a collection of small objects to be used as counters, such as buttons, beads, bread tags, or pebbles (optional)



Today, the student will practise counting to the number ten from a given number. The student will also learn to identify the numbers that come **before** and **after** a given number and **between** two given numbers. Recording and observing sequences is also a part of the day's activities.

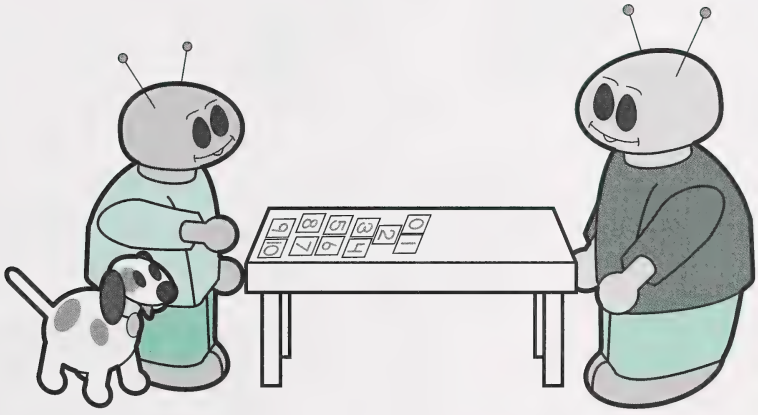
Developing the Concept

In front of the student, place the 0 to 10 number cards in order. Instruct the student as follows:

Count from 0 to 10 for me. (0, 1, 2, 3 . . . 10)

Now start at the number 3 and count to 10. (3, 4, . . . 10)

Start at the number 6 and count to 10. (6, 7, . . . 10)



Ask the student to help you mix up the number cards and then to place them face down on the table.

Next, pick a card, say the number on the card, clap the number, and then count to ten from that number.

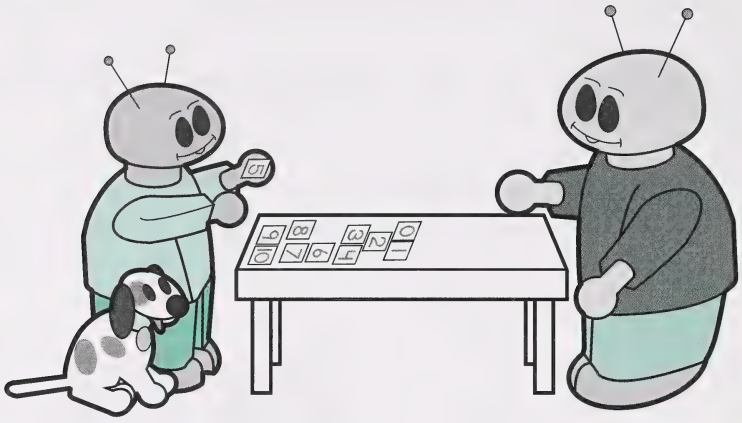
Take turns picking all the cards and following the sequence of activities. Give help where needed.

Randomly place the number cards face down on the table again. Turn a card face up and instruct the student as follows:

Tell me the numbers that come **before** and **after** this number when you are counting.

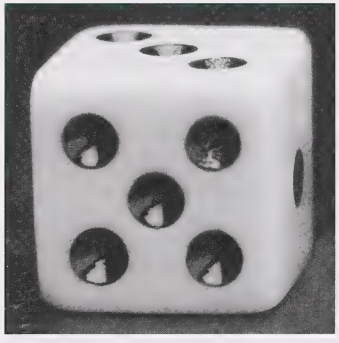
If you turned up the number 7, the student needs to say the numbers 6 and 8. Assist the child as necessary.

Take turns picking up cards and telling the numbers that come before and after the chosen number.



Applying the Concept

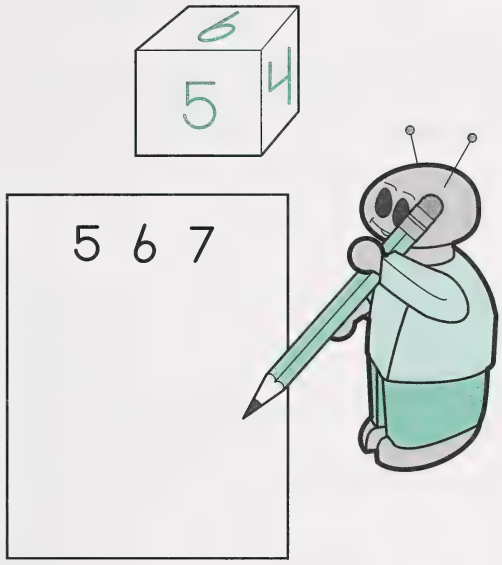
Before-and-After Roll



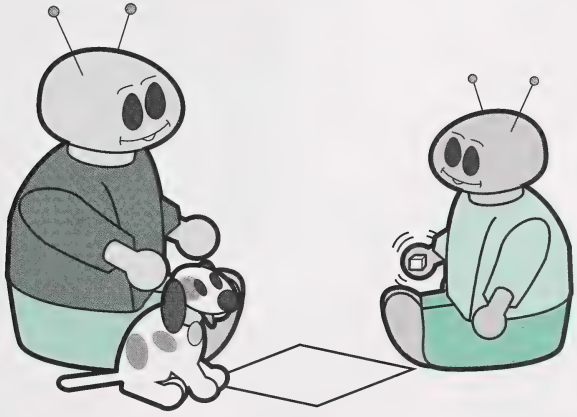
Step 1: Have the student roll the die.

On a piece of paper, have the student print the rolled number and the numbers that come before and after it.

For example, if a number 6 is rolled, the student prints the numbers 5, 6, and 7 on the piece of paper.



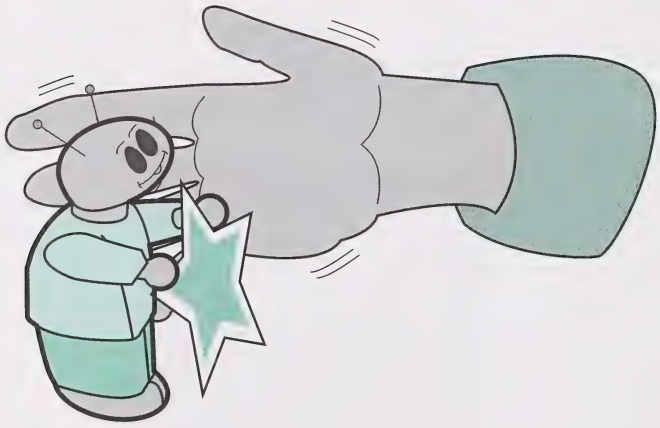
Step 2: Take turns rolling the die and printing the rolled number and the numbers that come before and after it.

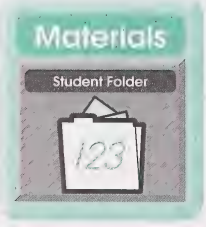


Step 3: Roll the die 20 times, and then observe how many times the same number sequence has been recorded.

4	5	3
5	6	7
0	1	2
2	3	4
1	2	3
3	4	5
5	6	7

Consider giving the student a pat on the back, a stamp, or a sticker when the activity has been completed with care and effort.





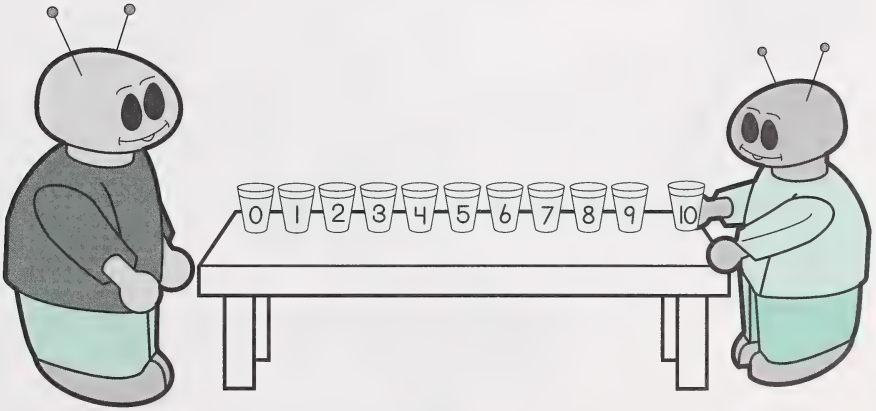
Step 4: On the back of the record sheet, have the student print his or her full name and the abbreviated form of the module and day numbers, M3D13. Place this page in the Student Folder.

Enrichment (optional)

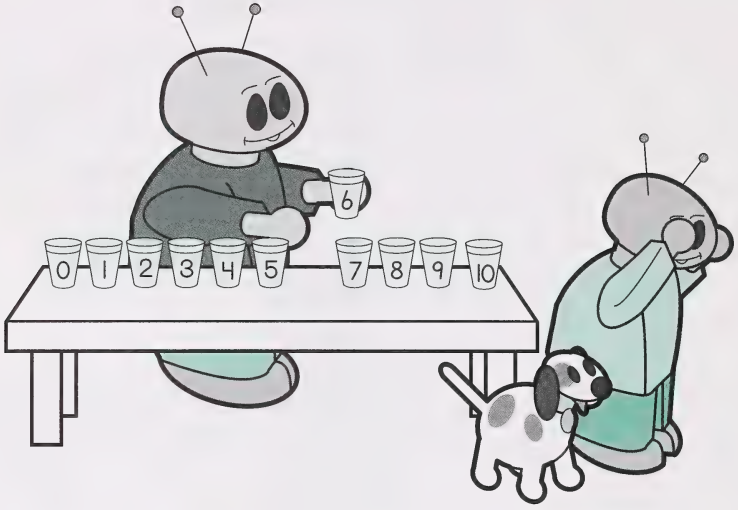
The Missing Container

Step 1: Label the outside of each container with the numbers 0 to 10. Have the student use the collections of small objects to make sets of zero to ten objects. Ask the student to place the sets in each matching container.

Step 2: Ask the student to help you place the filled containers in order from zero to ten.

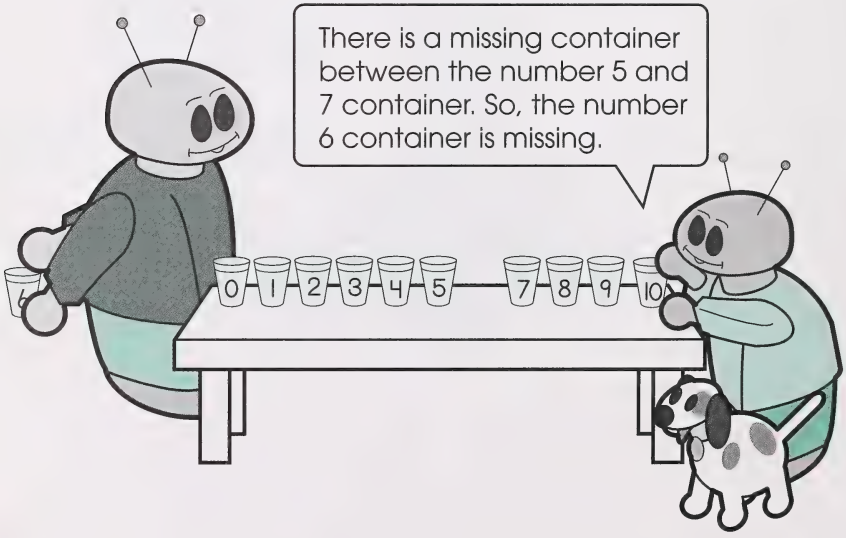


Step 3: Tell the student to close his or her eyes as you hide a container from the ordered set.

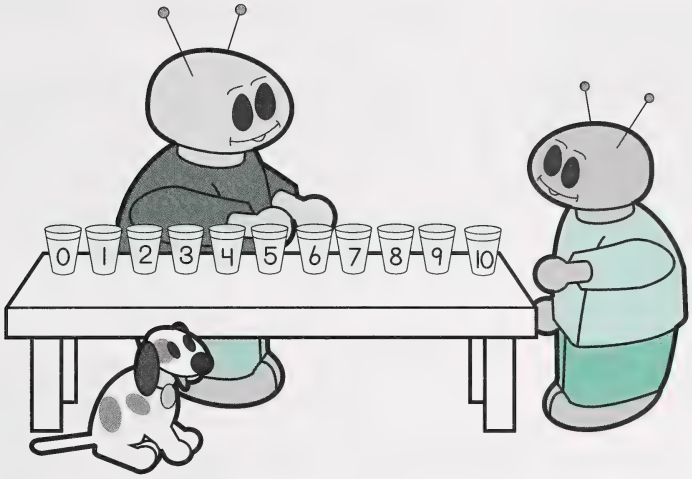


Step 4: Have the student look at the ordered set and tell you which container you hid.

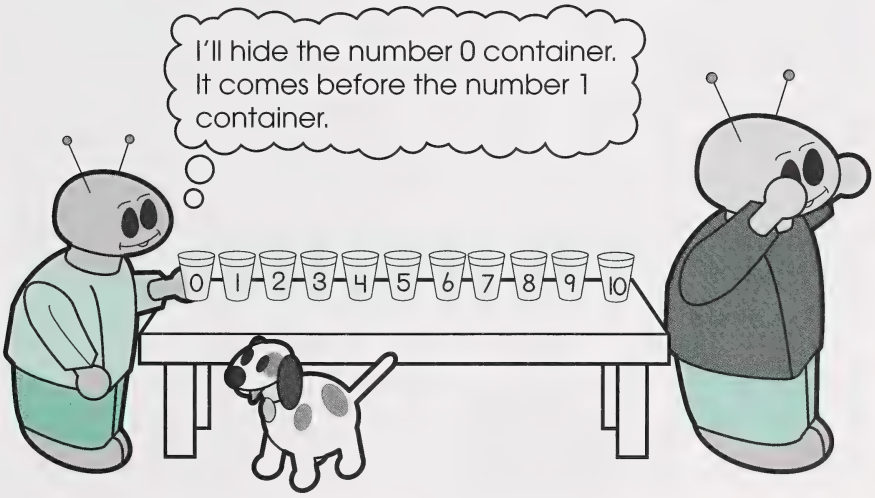
Encourage the student to explain using the words **before**, **after**, or **between**. Assist the child whenever necessary.

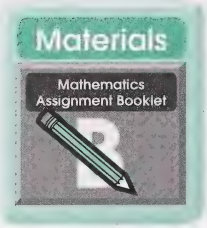


Step 5: Replace the container after it has been correctly identified.



Step 6: Take turns hiding a set of objects and determining which container is missing.





Turn to Mathematics Assignment Booklet 3B, and follow the directions to do the assignment for Day 13.

Then complete Day 13: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, what does the child think about his or her ability to record numbers before, after, and between?

Day 14

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

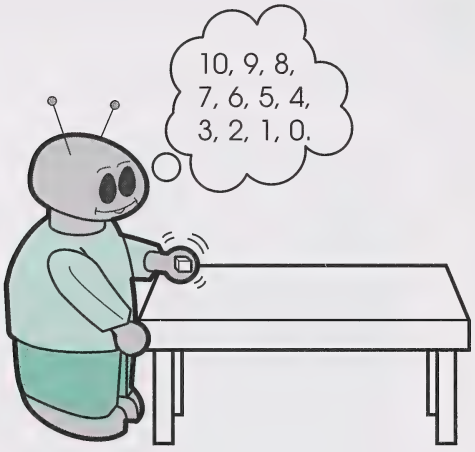
- counting forward and backward from a given number

Vocabulary (spoken only)

counting forward
counting backward
pennies
purse
lowest
highest
remaining
hot
cold

Materials Required

- box containing required materials from the master list
- change purse
- ten pennies
- 0 to 10 number cards
- a die with the words **five** to **ten** written on it (optional)
- a favourite toy, stuffed animal, or other object (optional)



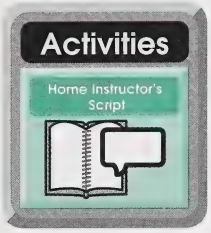
Developing the Concept

Today, the student will practise **counting forward** from a given number to ten and **backward** from ten to a given number.

If the student has difficulty counting forward or backward from a given number, continue to provide many opportunities to count manipulatives, both forward and backward.

Have the student watch you place eight **pennies** in a change **purse**. Ask the student to help you count each one as it is put in the purse.

Then, continue with the following script.

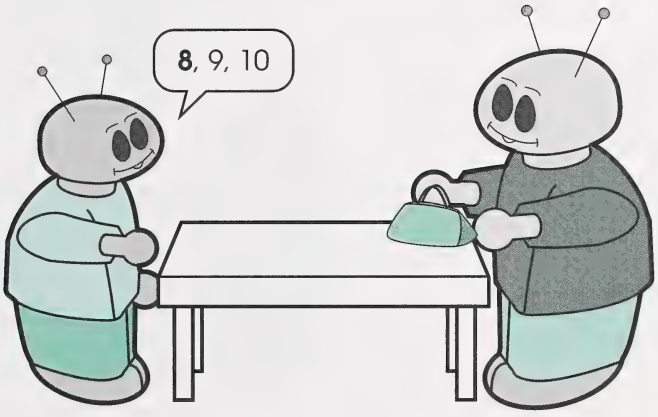


How many **pennies** do I have in this **purse**? (8)

I am going to add the two remaining **pennies** to the **purse**.

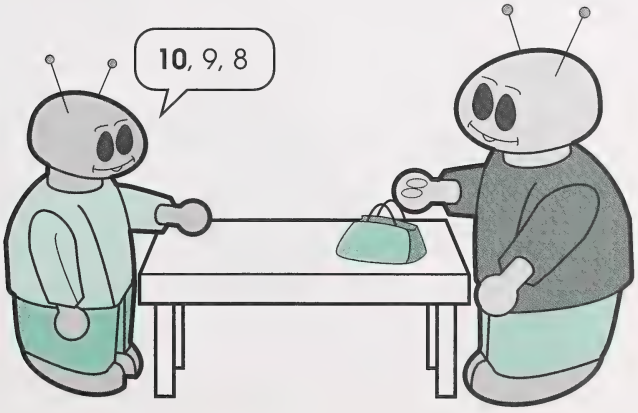
How many **pennies** are in the **purse** now? (10)

If the student experiences difficulty counting forward from eight, help him or her do so.



Now, take two pennies from the purse and ask the student how many pennies are left.

Guide the student to count backward to find the answer.

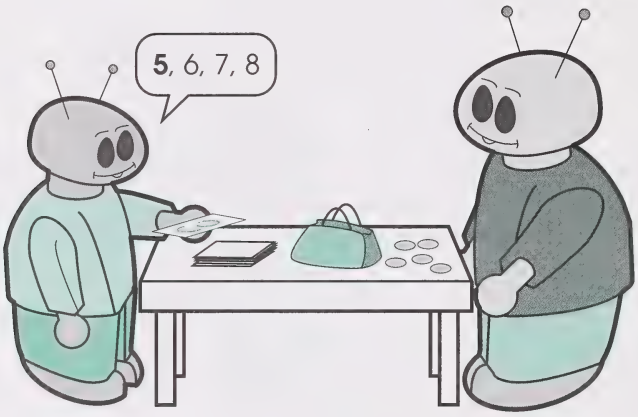


Applying the Concept

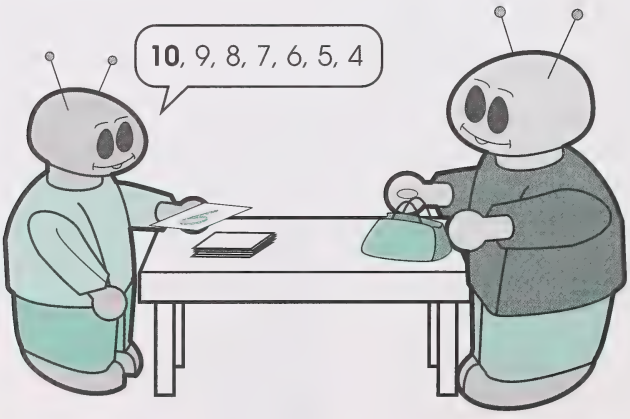
Shuffle the number cards, and place them face down on a table.

Take turns choosing a number.

After each number is chosen, add that number of pennies to the purse, and count forward to the new amount. If the number 10 card is chosen first, the student subtracts chosen cards until there are no pennies left or until the number on the card cannot be subtracted from the amount in the purse. In this case, the student switches to adding the card numbers.

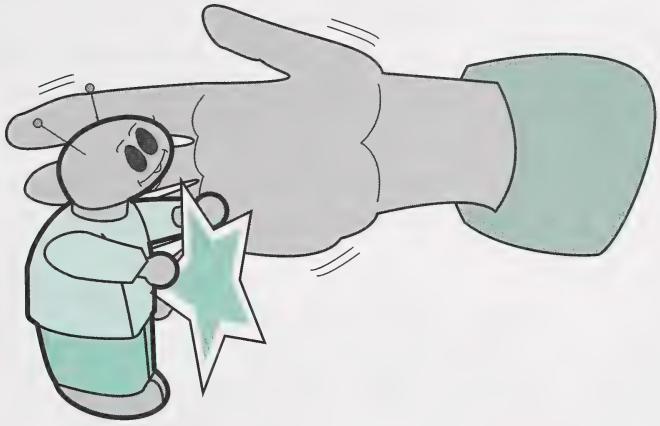


Continue until ten pennies are in the purse, and then count backward the number shown on each card.



After all the number cards have been used, reshuffle them and start the game again.

Play this game until the student has had the opportunity to practise counting forward and backward or until signs of fatigue are shown.

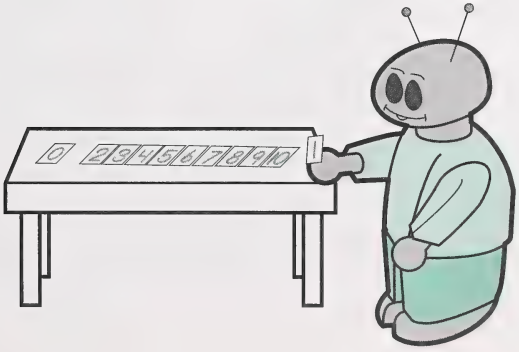


Enrichment (optional)

1. Order from Lowest to Highest

Ask the student to order from **lowest** to **highest** the 0 to 10 number cards.

Beginning with the 0 card, have the student say each number and then turn the card face down.

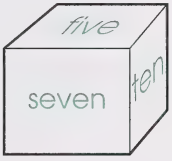


Next, have the student count back from ten (10, 9, 8, . . . 0) as you turn each card face up.

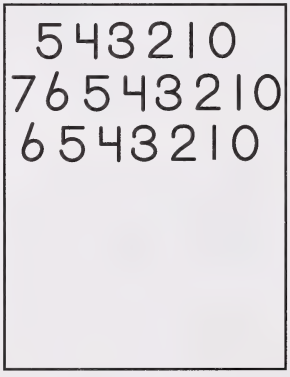
Continue the activity with some cards face up and some face down. Have the student say the numbers that are face down, and then turn each card face up to check if he or she is correct.

2. Counting Backward

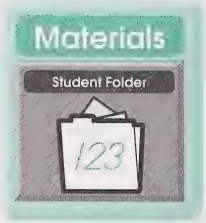
Provide the student with a die labelled with the number words from five to ten.



Have the student roll the die, record the rolled number on a sheet of paper, and then record the rest of the numbers down to zero.



Take turns rolling the die and recording the rolled number and the remaining numbers down to zero. Roll the die 20 times, and then observe how many times the same number sequence has been recorded.



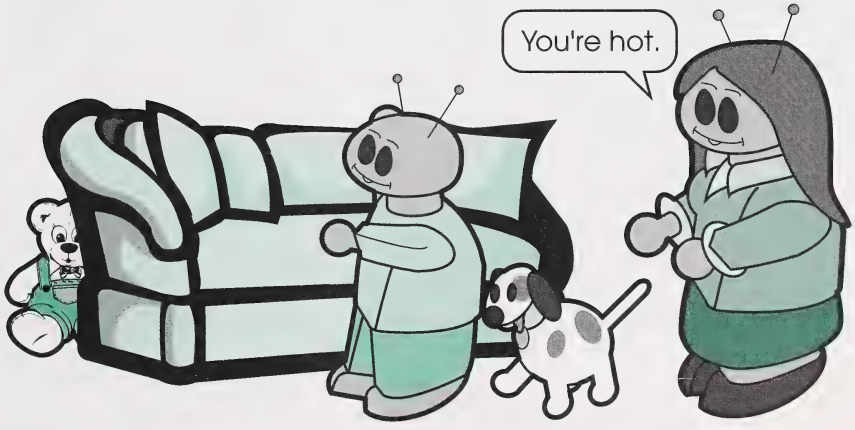
The student may send this activity in for submission. Before placing the Counting Backward page in the Student Folder, ask the child to print his or her full name and the abbreviated form of the module and day numbers, M3D14, on the back of the page.

3. Hide and Seek

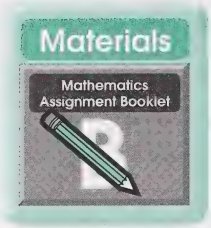
For this activity, ask the student to choose a favourite object to use for a game of Hide and Seek.

Step 1: Have the student close his or her eyes and count backward from ten to zero while you hide a favourite object.

Step 2: If the student does not find the object after approximately two minutes, give him or her hints, such as "You're hot" or "You're cold."



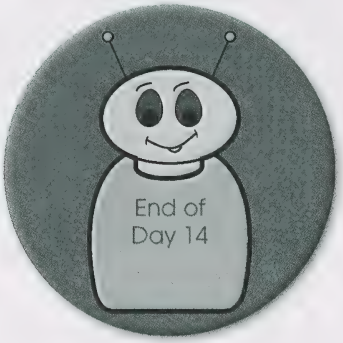
Step 3: Take turns hiding the object and finding it.



Turn to Mathematics Assignment Booklet 3B, and follow the directions to do Day 14: Assignment 1.

Next, follow the directions to do Day 14: Assignment 2.

Then complete Day 14: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, is it easy to count forward and backward from a given number?



Day 15

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

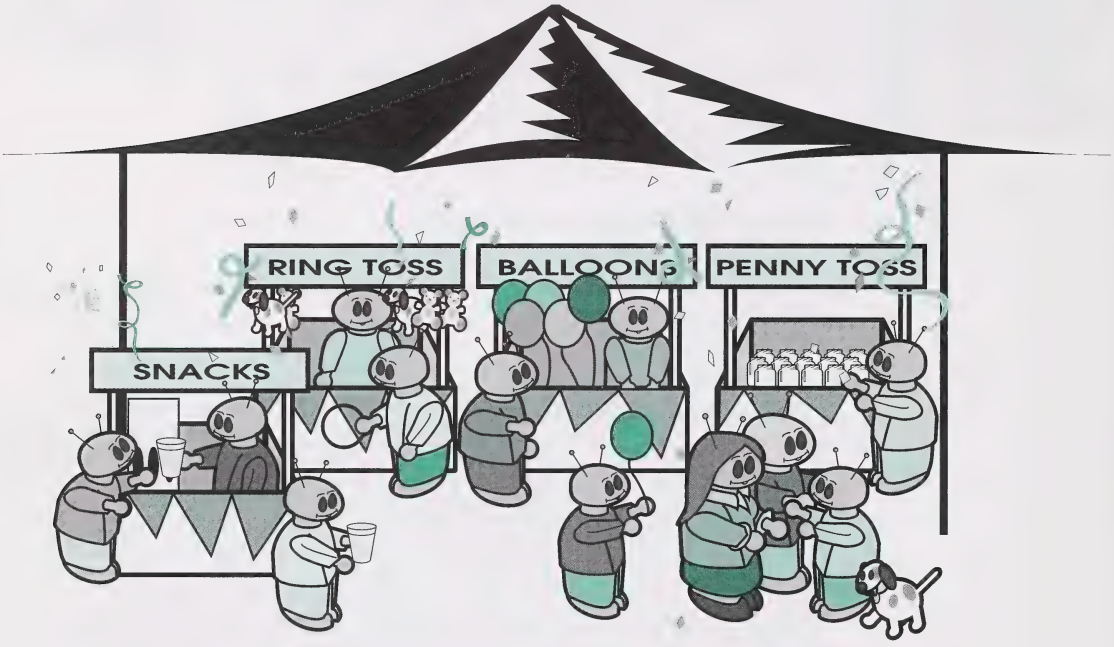
- gathering and using information in order to develop a greater understanding of how mathematics is used in everyday situations

Vocabulary (spoken only)

advertisement	how much	carnival
what	cost	booths
question mark	company	posters
sizes	phone number	invitations
who	address	schedule

Materials Required

- box containing required materials from the master list
- old catalogues, newspapers, and magazines
- materials to set up a penny carnival (optional)
- library books (optional)



Developing the Concept

Today, you will help the student gather important information from **advertisements**, such as those found in newspapers, flyers, and catalogues.

Ask the student to cut out an advertisement that offers a definite item for sale. Be sure to have the child cut out the complete advertisement, not just the article being sold.

Applying the Concept

Talk about the advertisement. It may not have all the information asked for in the following script, so you will have to adapt the dialogue accordingly.

We are going to make a list of the kinds of information that we can find in this advertisement.

What is being sold in this advertisement?

Print the word **what** and a **question mark**.

Next, print the name of the item being sold.

What?
bicycle

Does the item come in different colours?

If so, **what** colours?

Print the colours that it comes in underneath the name of the item.

What?
bicycle colours blue or green

Does the item come in different **sizes**?

Which **sizes** does it come in?

Print the **sizes** that it comes in underneath the colour words.

What?
bicycle
colours
blue or green
sizes
Youth or Adult

How much does the item **cost**?

Print the words **how much** and a **question mark** underneath the **sizes** or on a new sheet of paper.

Now, print the **cost** of the item.

How much?	
Youth	$89.00
Adult	$113.99

Underneath the **cost** of the item, print the word **who** and a **question mark**.

Let's look for **who** makes the item, and then print the name of the **company** underneath the word **who**. (Assist the child as necessary.)

Is there a **phone number** and an **address** on the **advertisement**?

What is the difference between a **phone number** and an **address**? (Discuss)

Underneath the cost of the item, print the **address** and **phone number**.

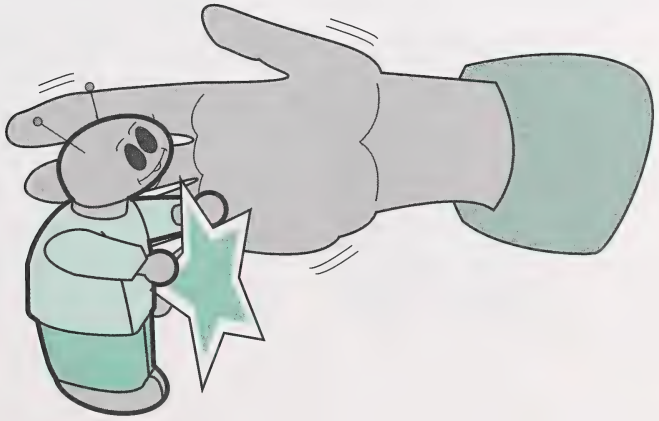
How much?

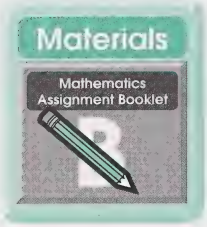
Youth $89.00
Adult $113.99

Who?

Company
Phone Number
Address

Discuss other features of the advertisement and continue to list the student's observations. For example, is there something special about the advertisement that would make you want to buy the item?





Turn to Mathematics Assignment Booklet 3B, and follow the directions to do Day 15: Assignment 1.

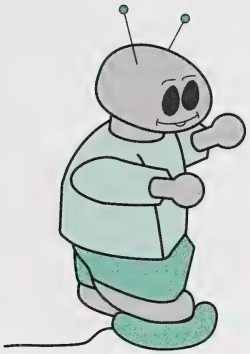
Enrichment (optional)

A Penny Carnival

With the assistance of the student, set up five or six carnival **booths**. Some booth ideas might include the following.

- Ring Toss

- Penny in the Jar



- Ball in the Bucket
- Pop the Balloon
- Fishing for a Prize

Encourage the student to think of booth ideas, or adapt the ideas in this activity.

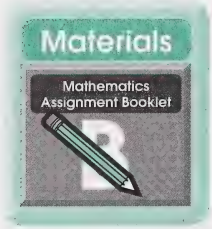
Help the student make a sign for each activity that tells the players the name of the activity and the cost. Consider selling popcorn, juice, and other goodies at the carnival as well.

In addition, you may want to create **posters** or **invitations** that advertise the penny carnival. Invite family and friends to the event.

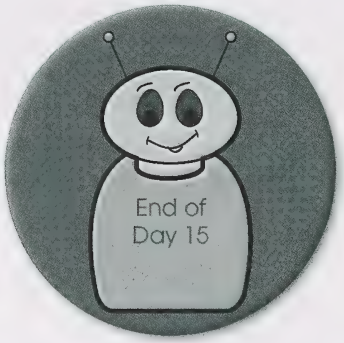
Set up a **schedule** so that you, the student, and other interested participants can take turns running the booths and participating in the activities.

The cost for participating in each activity and buying treats should be from one to ten cents.

Prior to the Penny Carnival, you and the student may want to shop for some prizes.



Complete Day 15: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, what did the child think about his or her ability to create an advertisement?



Day 16

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

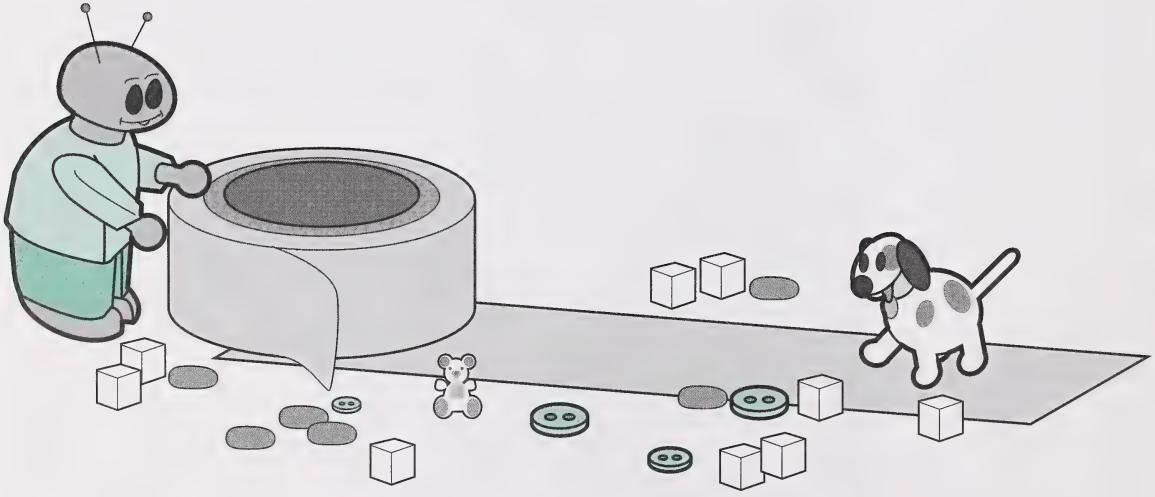
- reviewing the identification of numbers, number words, and sets to ten
- reviewing counting forward and backward from a given number

Vocabulary (spoken only)

There is no new vocabulary.

Materials Required

- box containing required materials from the master list
- 0 to 10 number cards
- collection of approximately 50 counters, such as buttons, small toys
- zero to ten word cards
- wide masking tape
- forward and backward spinner made from heavier weight paper or cardboard and spinner attachment
- die with numbers 0 to 5 and die with the numbers 5 to 10 (Place masking tape on each die and then print the required numbers on them.) (optional)
- die with the words **more** and **less** printed on random sides (optional)



Developing the Concept

Today, you will review numbers and number words from zero to ten and sets with one to ten members.

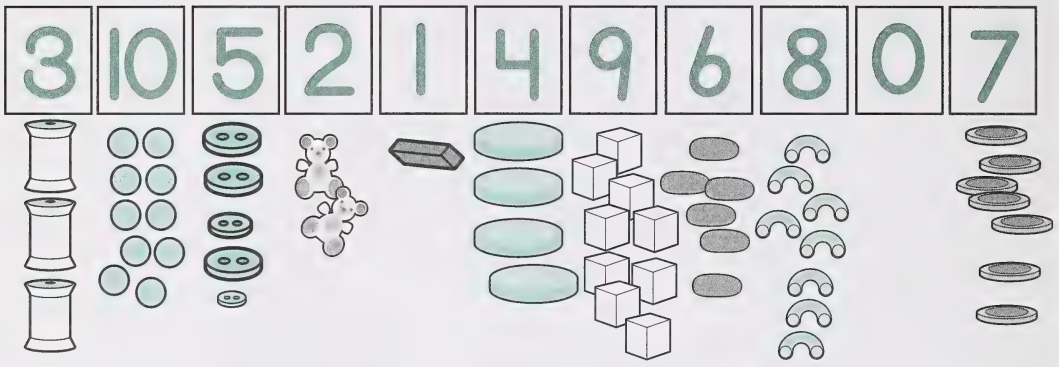
While the student is involved in this day's lesson, check for the following counting behaviours:

- Does the student confidently count out the set, with one-to-one correspondence of counters to number names?
- Does the student exhibit any hesitancies, omissions, repetitions, or confusions while counting?
- Can the student start at a point other than the beginning of the counting sequence and count forward and backward?

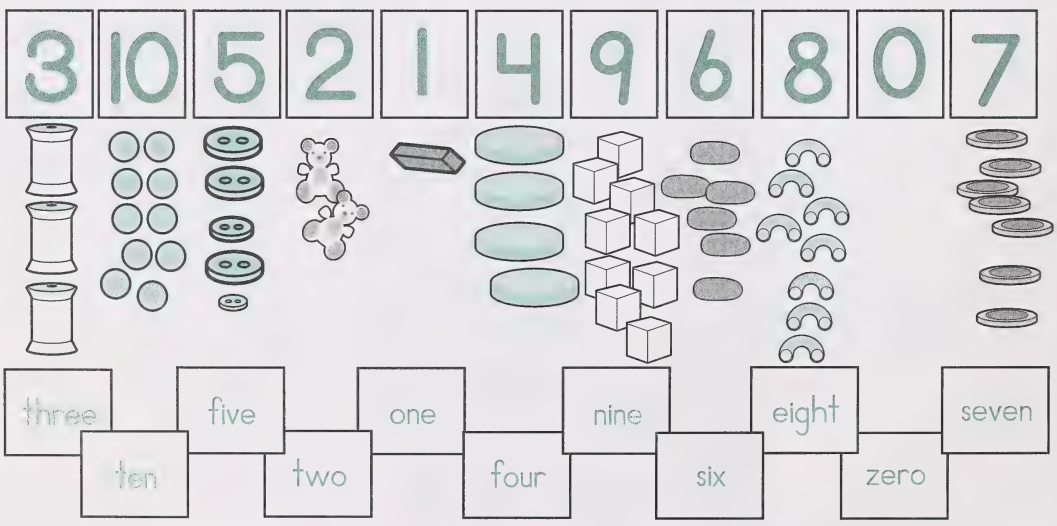
Comment about your observations later in the Day 16: Learning Log.

In random order, place the 0 to 10 number cards.

Ask the student to read each card and then place the matching number of counters underneath each card. Guide the student as necessary.

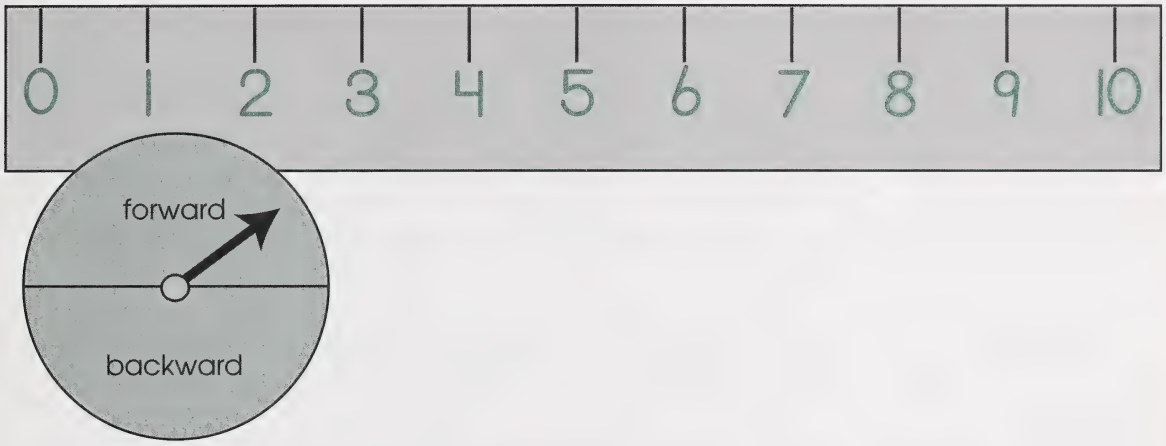


Next, ask the student to place the zero to ten number word cards in a matching order. Continue to help as required.



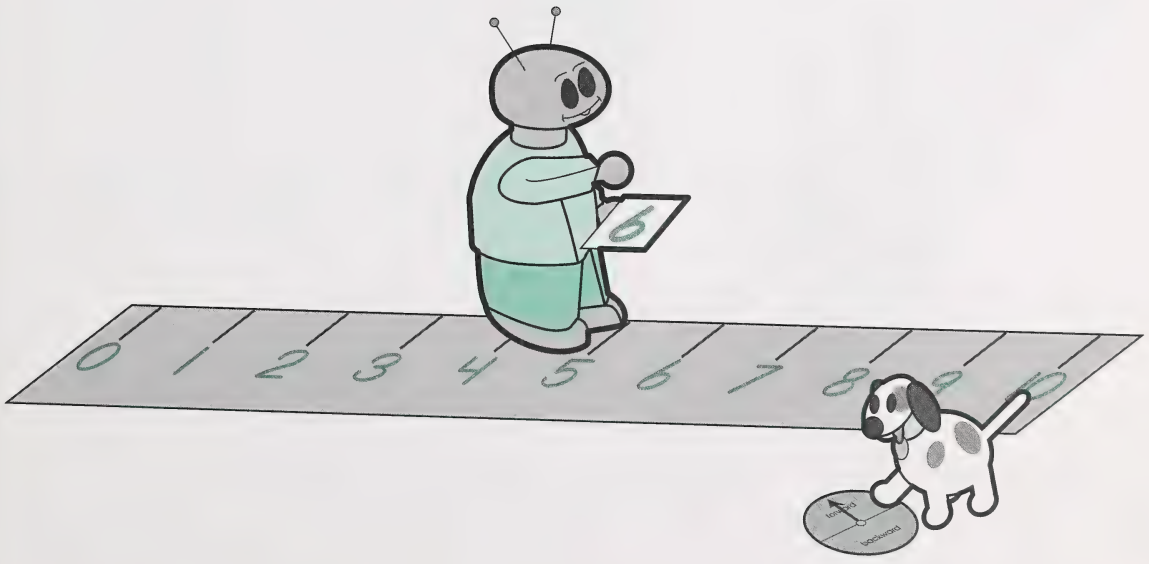
Applying the Concept

Place a wide strip of masking tape on the floor, and evenly mark the numbers from 0 to 10 on it. This piece of masking tape will act as a **number line**.



Shuffle the number cards, and place them face down.

Take turns choosing number cards, spinning the spinner, and moving the matching number of spaces either forward or backward.



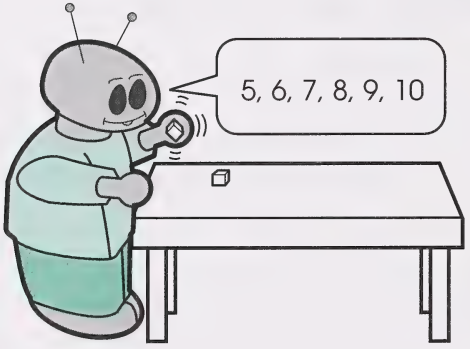
If the spinner lands on an option that isn't possible, then you continue to spin until a movement is possible. For example, if the student is on zero, and spins backward, he or she can spin again.

Enrichment (optional)

1. Forward and Backward Counting

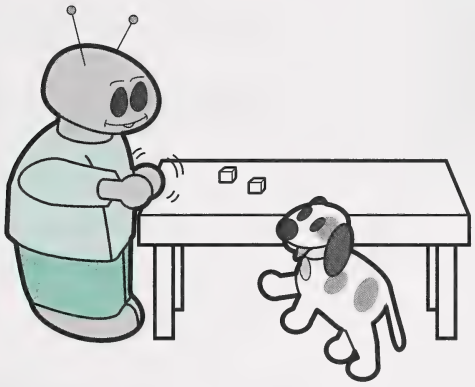
In front of the student, place the die with the numbers 0 to 5 and the die with the numbers 5 to 10. The student can choose to roll either die and then count from the number shown forward to ten or backward to zero. Monitor the child's choices, however, so that he or she does not always choose to count only forward or only backward.

Take turns choosing which die to roll and counting forward and backward.

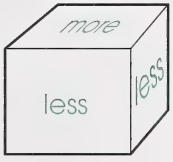


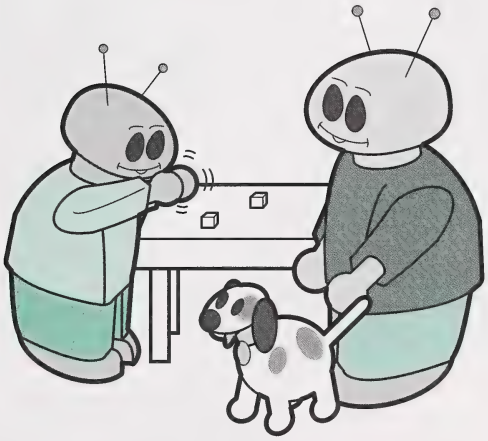
Once the student has had the opportunity to practise the previous activity, add the die with the words **more** and **less** printed on it.

The student rolls any numbered die and the word die. If the word **more** is rolled, have the student clap a number that is one more than the number shown on the number die.

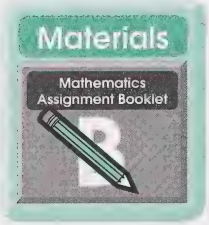


If the word **less** is rolled, have the student clap a number that is one less than the number shown on the number die.





Take turns rolling the dice and clapping the correct amount until the child has had the opportunity to practise this activity.



Turn to Mathematics Assignment Booklet 3B, and follow the directions to do Day 16: Assignment 1.

Next, follow the directions to do Day 16: Assignment 2.

Then complete Day 16: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, what did the child think about his or her ability to identify numbers, number words, and sets to ten?

Day 17

Calendar Time

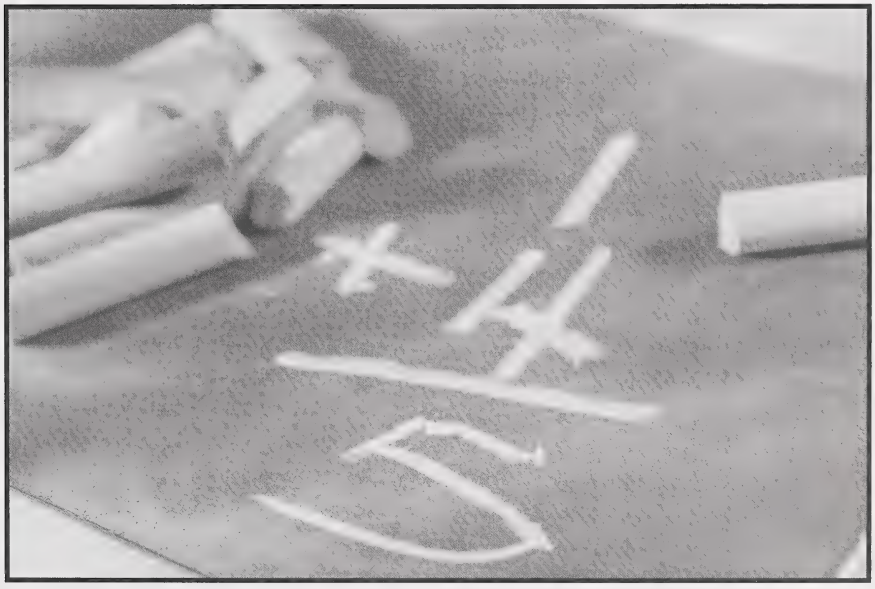
Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

Time recommended: 45 minutes

- adding and subtracting facts to five
- making new sets by adding or subtracting members

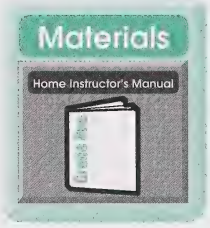


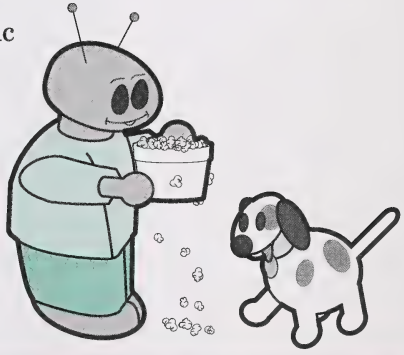
Vocabulary (spoken only)

operation

Materials Required

- popcorn and bowl
- plate
- addition number-sentence cards (Make any missing cards for sums to five from blank index cards.)
- subtraction number-sentence cards (Make any missing cards for differences to five from blank index cards.)
- **I know** and **practice** containers
- timer with a second hand
- 0 to 10 number cards
- sign cards for plus, minus, and equals (optional)
- 20 bingo chips or other small counters—ten of one colour and ten of another colour (optional)
- a collection of at least ten plastic animals (optional)
- forest storyboard from the Appendix of the Home Instructor's Manual (optional)





Today, you will review addition and subtraction facts to five. The student will also learn to make new sets to ten by adding members.

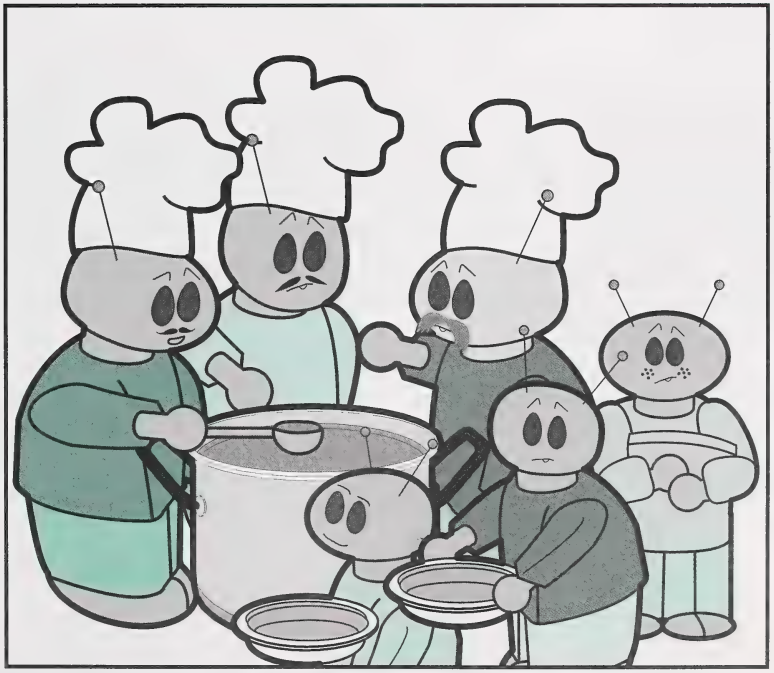
The program may appear to move slowly over the next few assignments and seem repetitive. Usually, the extra review is necessary for the student to master the basic facts to five in addition and subtraction **operations**.

Developing the Concept

Read the following rhyme with the student a few times.

Pease Porridge

Pease porridge hot,
Pease porridge cold,
Pease porridge in the pot
Nine days old.
Some like it hot,
Some like it cold,
Some like it in the pot
Nine days old.



After reading the rhyme, ask the student the following questions:

How many people are in this picture? (6)

How many are children? (3)

Who are the people with the hats? (chefs or cooks)

How many hands do you see in the picture? (7)

What do you think is in the pot? (porridge)

Would you want to eat porridge that is nine days old? Why or why not?

Applying the Concept

The student who accepts the starting set of three and counts on to four, five, and six to find the new sum is counting forward.

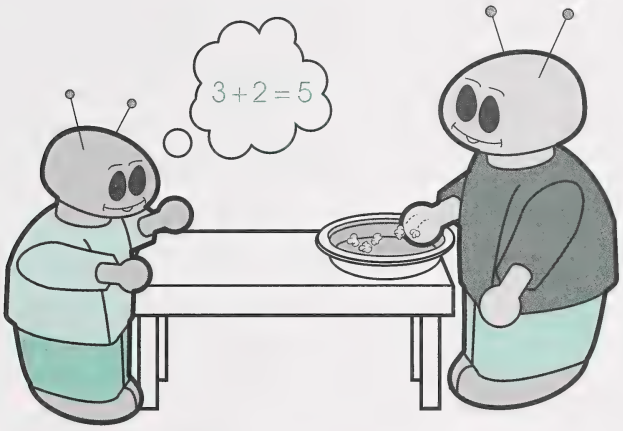
Given the same situation, the student that starts over at one and counts to six is still at the stage of counting one-to-one correspondence. This child needs continued practice in

- counting manipulative objects
- counting forward
- recognizing subsets within greater sets
- changing sets by one or two members

Have the student help you make some popcorn, and then place it in a bowl.

In front of the student, place the cards with addition number sentences face down. Choose a card, without the student seeing it, and use the popcorn to demonstrate the number sentence on the card.

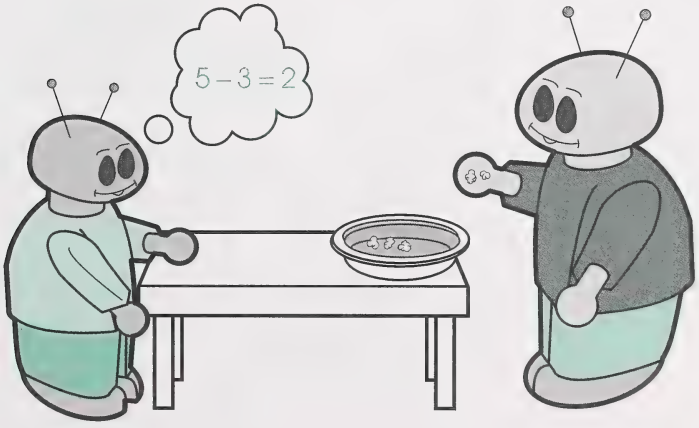
For example, if you chose a card that says $3+2=5$, you would first put three pieces of popcorn on a plate, and then you would put two more pieces on the plate.



Next, you would ask the student to tell you the addition number sentence, based on what you just did. Assist the child as necessary.

Once the student says the addition number sentence correctly, show a corresponding subtraction number sentence. For example, you could show the subtraction sentence $5-3=2$ by eating three pieces of popcorn.

Have the student tell you the subtraction number sentence, based on what you did. Continue to assist the child as necessary.



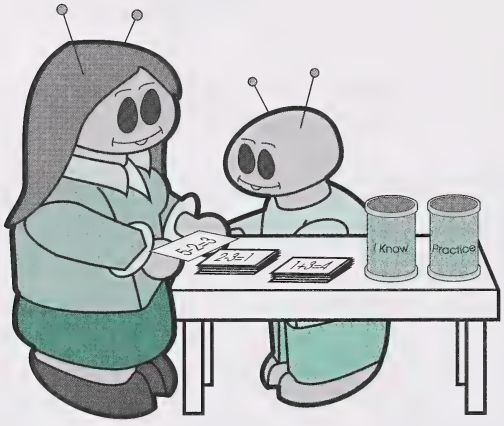
Take turns choosing cards with addition number sentences and using popcorn to demonstrate them. Then use the same popcorn to show a corresponding subtraction number sentence.

Be sure to include some number sentences where you do not add or subtract any of the popcorn, so that the child will have the opportunity to work with zero.

Continue the game until all the addition number sentences to five have been demonstrated.

Five-Minute Practice

Place the addition and subtraction number-sentence cards and the **I know** and **practice** containers in front of the student.



Set a timer for five minutes. Show each card to the student, covering the answer as you do so. Encourage the student to use counters if needed.

If after one minute the student is still unable to say the whole number sentence, say it for him or her. Then, have the child repeat the number sentence.

Ask the student to place the number sentences that she or he knows in the **I know** container and the unknown ones in the **practice** container.

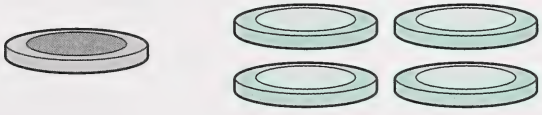
Enrichment (optional)

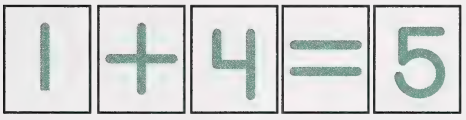
1. Make a Number Sentence

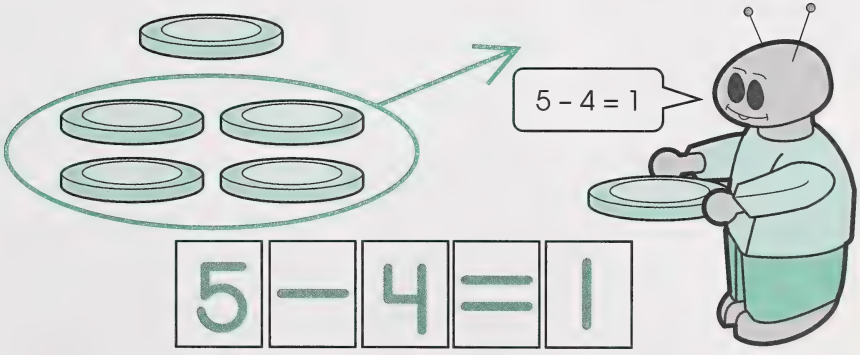
Step 1: In front of the student, place the number cards; the sign cards for plus, minus, and equals; and 20 bingo chips.

Then have the student help you make the five letter cards for the word **great**.

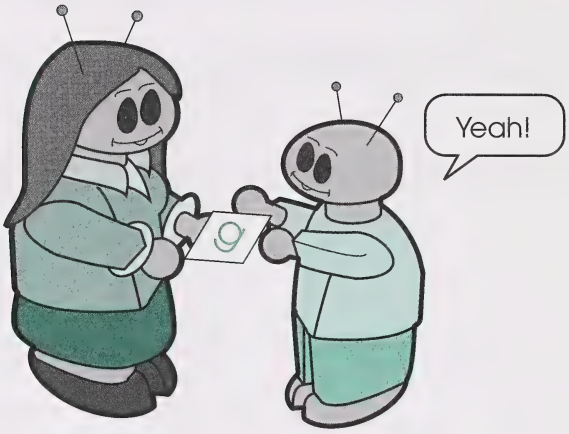
Step 2: With the bingo chips and number and sign cards, have the student make addition and subtraction number sentences.







Assist the child as necessary. For every correct number sentence, have the student take one letter card.



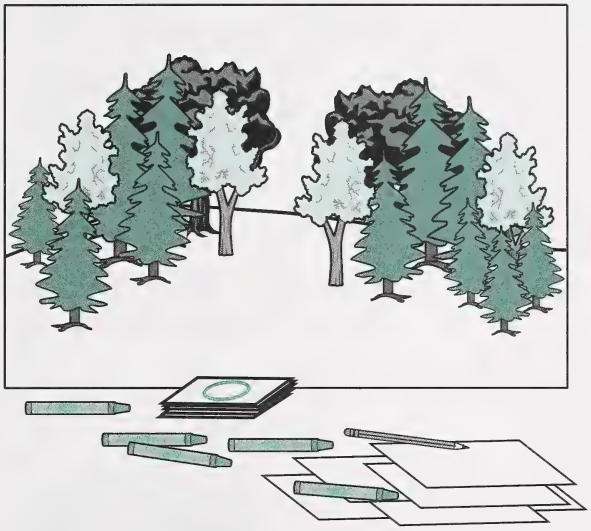
Step 3: Take turns making number sentences and checking each other's sentences for correctness.

Continue this activity until the student has had the opportunity to practise the number sentences.

When the student has collected all the letter cards, he or she says the word aloud. After the student says the word, you may want to give a sticker or another type of treat.

2. Show a Number Story

Step 1: Place the number cards; the sign cards for plus, minus, and equals; and the unlined loose-leaf paper, pencil, and crayons beside the forest storyboard.



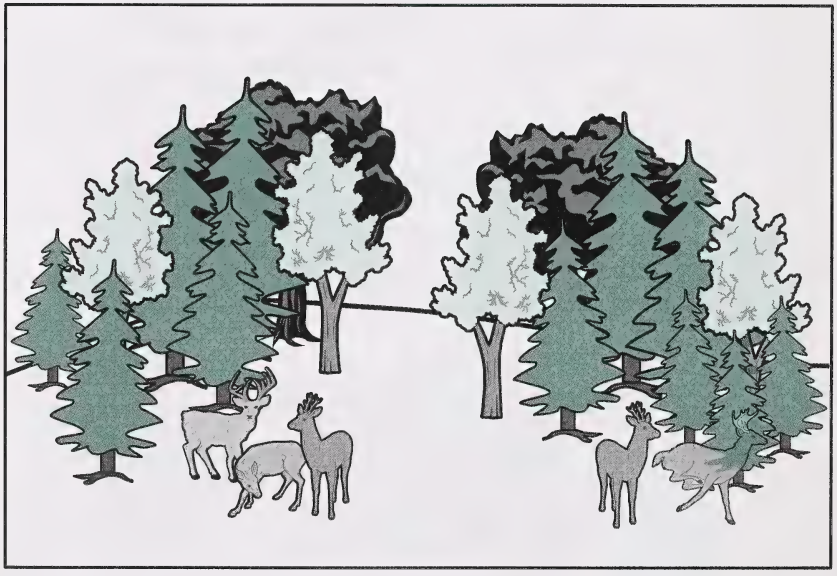
Step 2: If the student has a collection of small, plastic animals, have the child place the collection beside the storyboard.

If the student does not have a collection of animals, help the child make a variety of animal puppets.

Step 3: Tell the student a story similar to the following:

Once upon a time, two deer were making their way through the forest when they came upon a clearing. The grass in the clearing looked delicious so they stopped to nibble on it. (The student places two deer on the storyboard and pretends to have them nibbling on some grass.)

After a few minutes, three more deer appeared in the clearing and stopped to nibble the tasty grass. (The student places three more deer on the storyboard.)



Step 4: On an unlined sheet of paper, ask the student to solve the following problem:

How many deer are nibbling the grass?

Encourage the student to use the three-step, problem-solving strategy to answer the questions.

Three-Step, Problem-Solving Method

$2+3=\square$
$2+3=5$
There are 5 deer nibbling the grass.

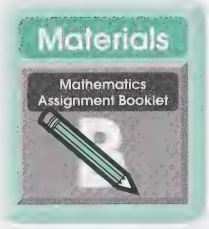
$7-3=\square$
$7-4=3$
There are 3 deer left nibbling grass.

Step 5: Take turns telling stories and using the three-step, problem-solving method.

Continue until the student has had the opportunity to practise this strategy.

You and the student may each want to choose one of the problem-solving situations and then do an illustration to match.

$2+3=\square$
$2+3=5$
5 deer were nibbling the grass.



Turn to Mathematics Assignment Booklet 3B, and follow the directions to do Day 17: Assignment 1.

Next, follow the directions to do Day 17: Assignment 2.

Then complete Day 17: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, was it easy or hard to add and subtract facts to five? Is one operation easier than the other?

Day 18

Calendar Time

Time recommended: 10 minutes

Proceed with Calendar Time activities as usual.

Focus for Today

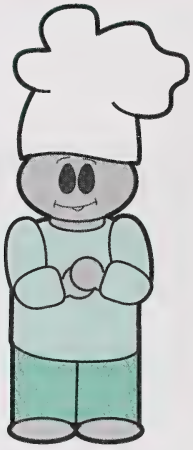
Time recommended: 45 minutes

- reviewing sums to five
- using the counting-forward and counting-all strategies
- solving problems using number sentences to five

Vocabulary (spoken only)

counting-forward strategy
counting-all strategy
ingredient(s)

Materials Required



- box containing required materials from the master list
- required utensils and ingredients for chosen baking activity
- table setting (optional)
- a variety of kitchen utensils, for example, measuring cups, wooden spoon, and measuring spoons (optional)

Developing the Concept

Children use different counting strategies when adding sets. For example, if a child counts six teddy bears and then continues to count "seven, eight, nine" until three more bears are added, this child is using a **counting-forward strategy**.

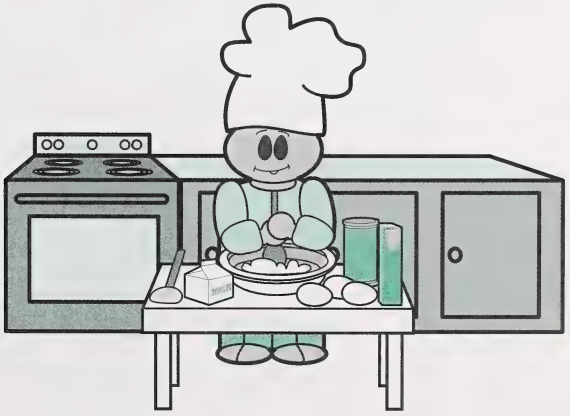
Given the same situation, another child initially counts the six teddy bears. After the three bears are added, he or she recounts the original six and then continues counting until the number nine has been reached. This strategy is referred to as a **counting-all strategy**.

Today, as you review addition facts to five, observe how the student counts sets. If the student counts all the objects, help him or her develop the counting-forward strategy and then a counting-all strategy to prove that both strategies produce the same count. Eventually, your goal is to develop the student's awareness that the counting-forward strategy is a quicker way to count.

To review the basic number facts, involve the student in a baking activity. For example, you and the student could make cookies or a cake to celebrate the completion of Module 3.

Have the student help you gather the required utensils and ingredients. The child can measure and pour the ingredients.

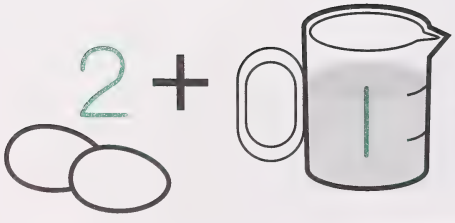
While the student is involved in the baking activity, you and the child may want to create verses similar to the following ones.



A-baking we will do,
A-baking we will do.
We'll crack two eggs
in a bowl.
And then we'll stir them so.

A-baking we will do,
A-baking we will do.
We'll measure a cup of flour
in the bowl.
And then we'll stir
it so.

Two eggs and a cup of flour,
Two eggs and a cup of flour.
Add, add, add them up,
Add them up to three,
Add them up to three.



The above verse could be sung to the tune of *A-Hunting We Will Go*.

Applying the Concept

While the mixture is baking, have the student print on a blank page two addition number stories that were part of the baking activity. For example, the student could begin the activity by using the three-step method of problem solving.

$2+1=\square$

$2+1=3$

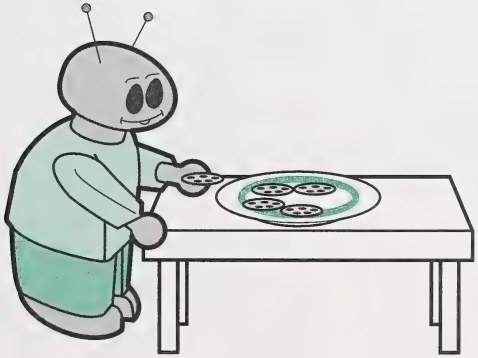
2 eggs plus 1 cup of flour equals 3 ingredients.

Have the student illustrate the two addition stories.

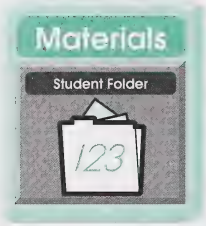
After the student has had the opportunity to eat some of the baking, encourage the child to print and illustrate a subtraction number sentence to add to the booklet. A verse like the following could be used with the subtraction number sentence.

An eating we will do,
An eating we will do,
I'll eat one cookie,
Yum, yum, yummy,
In the tum, tum, tummy.

A possible subtraction sentence might be $5-1=4$.



When the illustrations are complete, ask the student to make a cover page on another unlined sheet of paper.



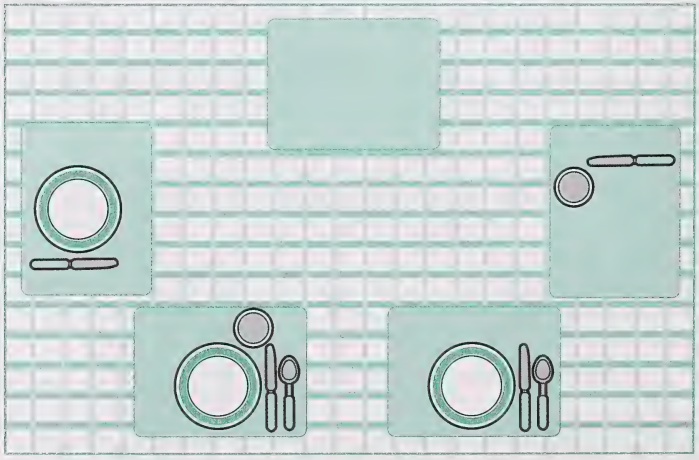
Staple the cover page, the two addition stories, a subtraction story, and a blank page together to make a booklet. On the back cover page, ask the student to print the abbreviated form of the module and day numbers, M3D18. Place the booklet in the Student Folder.

Enrichment (optional)

1. Set the Table

Step 1: Set the table and deliberately leave a few items missing. For example, if you usually set the table for five people, you may want to place three plates, four knives, one spoon, and two glasses on the table.

If you usually set the table for more than five people, have the child work with a maximum of five place settings, since this activity deals with sums to five.



Strategies that the child may find helpful in solving these problems are

- manipulating the items

- drawing the problem

There are 5 people at the table, but there are only 3 plates.

Step 2: The student must figure out which items are missing and how many are missing. Then, help the student print addition and subtraction sentences to match. For example,

3 plates + 2 plates = 5 plates

3 + ____ = 5

5 – 3 = ____

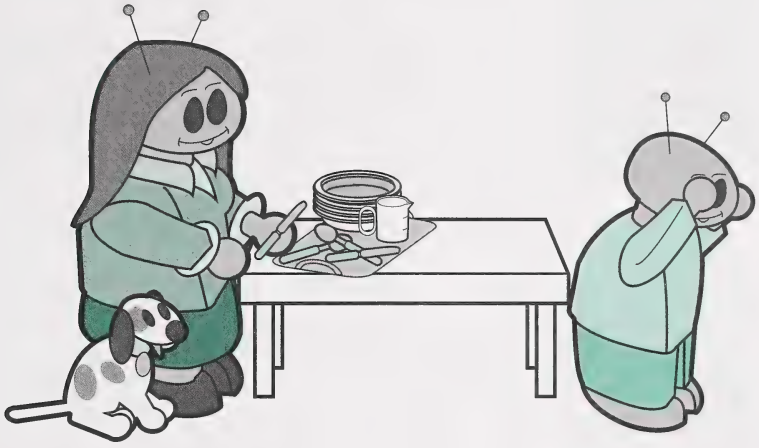
Step 3: Take turns setting the table and printing addition and subtraction number sentences to match the missing items.

2. Memory Game

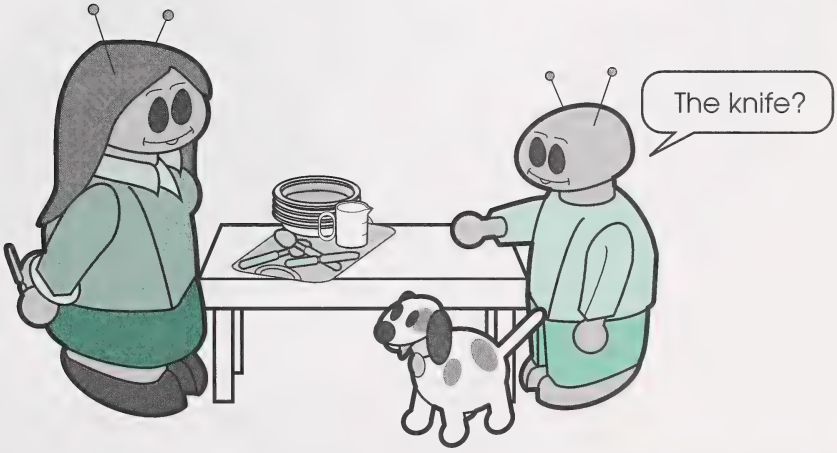
Step 1: On a tray, place kitchen items such as

- five measuring cups
- three spoons
- two knives
- four bowls
- one fork

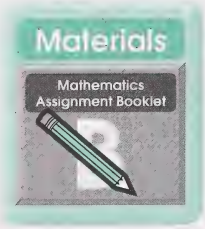
Step 2: Have the student turn away from the tray, and then take away one to five items of your choice.



Step 3: Ask the student to face the tray and then figure out what items and how many you took away. Assist the child as necessary.

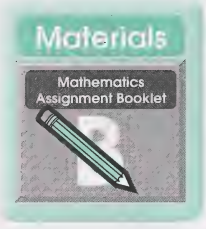


Step 4: Take turns taking away the items and figuring out what items and how many were taken away.



Turn to Mathematics Assignment Booklet 3B, and follow the directions to do the assignment for Day 18.

Then complete Day 18: Learning Log. Under Student's Thoughts, print a sentence or two telling what the student thinks about this day's mathematics learning, for example, what does the child think about his or her ability to count forward from a given number?



At the end of Mathematics Assignment Booklet 3B, follow the directions to complete Day 18, Student Folder Items. Gather the required materials from your Student Folder. Submit these items to your student's teacher for marking at the time the teacher has requested them.

Congratulations!
You have completed
Mathematics Module 3.

Credits

Some clip art drawings are commercially owned.

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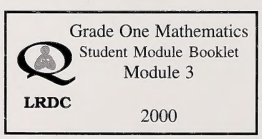
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